

**Study Profile: STAAR Biology – SAT Mathematics (★★★☆☆)**

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

**Motivation (★★★☆☆)**

This analysis was based on a single group of students who took both the STAAR biology 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 Biology Examinees Versus Those Linked to SAT Scores*

Group	Grade 8		Grade 9		Grade 10		Grade 11		Grade 12		Missing		Total
All Biology	1,225	0%	263,171	78%	66,925	20%	5,096	2%	1,969	1%	14	0%	<b>338,400</b>
Linked	6	0%	8,249	48%	7,614	44%	775	5%	567	3%	2	0%	<b>17,213</b>

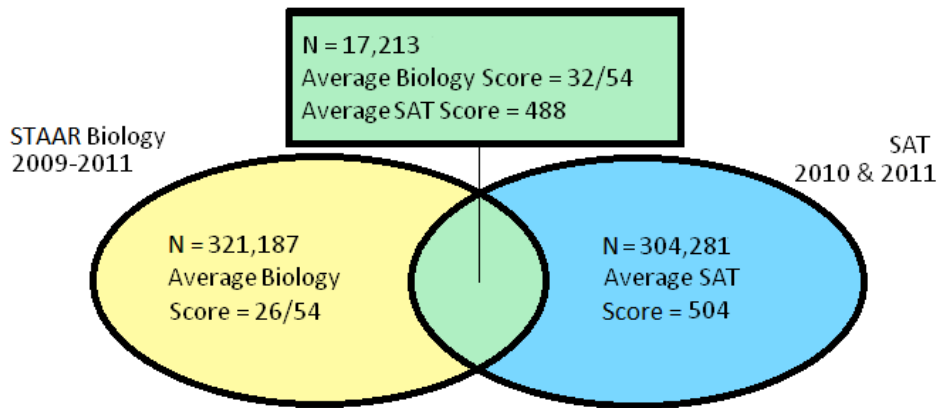
**Demographic Characteristics**

*All Biology Examinees Versus Those Linked to SAT Scores*

Group	Female		Economically Disadvantaged		African American		Hispanic		White		Other	
All Biology	167,493	49%	167,876	50%	44,072	13%	144,350	43%	128,124	38%	21,854	6%
Linked	9,433	55%	5974	35%	2,435	14%	5535	32%	7,796	45%	1,447	8%

**Summary of STAAR Biology and SAT Achievement**

*Linked and Unlinked Groups*



**Average SAT Mathematics Scores Based on Students' STAAR Performance**

Satisfactory Academic Performance	Advanced Academic Performance
528	615

**Correlation (★★★☆☆)**

Correlation between STAAR biology and SAT mathematics = **0.69**

**Content Overlap (☆☆☆☆☆)**

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

### Assessment Characteristics

Assessment Characteristic	STAAR Biology	SAT Mathematics
<b>Purpose</b>	Created to determine mastery of the biology 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.
<b>Assessment Type</b>	A criterion-referenced assessment	A norm-referenced assessment
<b>Content</b>	Measures cell structure and function, mechanisms of genetics, biological evolution and classification, biological processes and systems, and interdependence within environmental systems. At least 40% of the test questions will incorporate scientific process skills.	Measures arithmetic operations, algebra, geometry, statistics, and probability.
<b>Item Format</b>	54 multiple choice items total	54 items total: 44 multiple choice and 10 gridded response items
<b>Administration</b>	<ul style="list-style-type: none"> <li>• Administered in May, July, and December</li> <li>• Administered online and on paper</li> <li>• Administered by trained school personnel</li> <li>• 4 hour time limit</li> </ul>	<ul style="list-style-type: none"> <li>• Administered seven times annually</li> <li>• Administered by approved test supervisors, room supervisors and proctors at an approved testing site (often a school with the test administered by school staff).</li> <li>• Students use an answer document to record answers to exam questions.</li> <li>• Students have 70 minutes to take the math assessment. The mathematics test is divided into three sections. Students have two 25-minute sections and one 20-minute section.</li> </ul>
<b>Performance Standards</b>	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.