

College Admissions Testing General Information, Class of 2012

College Admissions Testing: The SAT and ACT

Introduction

The SAT and ACT examinations are designed to measure students' college readiness and academic achievement as they prepare for postsecondary college and career opportunities. Most U.S. colleges and universities take into consideration some combination of college admissions test scores and school achievement records when making decisions about admissions and course placement. Both examinations are based on the high school curriculum. The SAT assesses examinees' knowledge in core subject areas, as well as ability to think, solve problems, and communicate (College Board, 2011c). The ACT measures examinees' ability to apply content knowledge and reasoning skills acquired in various high school courses (ACT, Inc., 2012d). The SAT is developed by the College Board, with input from high school teachers and college educators (College Board, 2011c). ACT, Inc., develops and governs the administration of the ACT (ACT, Inc., 2012d).

The Examinations

SAT. The SAT consists of three sections: critical reading, mathematics, and writing (Table 1 on page 2). The critical reading section is 70 minutes in length and consists of 19 multiple-choice sentence completion questions and 48 multiple-choice passage-based reading questions (see, e.g., College Board, 2011c). The sentence completion questions assess vocabulary and understanding of sentence structure. The passage-based questions assess understanding of vocabulary in context; ability to analyze and synthesize information; and ability to comprehend what is explicitly stated, as well as what is implied, in text passages.

The mathematics section is 70 minutes in length and consists of 44 multiple-choice questions and 10 student-produced response questions. Both types of questions in the mathematics section assess ability to apply mathematical concepts; solve problems; and use data literacy skills to interpret tables, charts, and graphs. Additionally, the questions assess knowledge and ability in the areas of numbers and operations; algebra and functions; geometry and measurement; and data analysis, statistics, and probability.

Table 1
A Brief Comparison of the SAT and ACT Examinations, 2011-12

Characteristic	ACT	SAT
Type of test	The ACT is a curriculum-based, college readiness test that assesses what students learn in their classes; similar to an achievement test.	The SAT is a curriculum-based, college readiness test that assesses the academic skills and knowledge students acquire in high school and the ability to apply that knowledge.
Test structure	English (1 section) Mathematics (1 section) Reading (1 section) Science (1 section) Includes 1 experimental section on selected testing dates Writing (1 optional section)	Critical Reading (3 sections) Mathematics (3 sections) Writing (3 sections) Includes 1 experimental section
Test content	<p><u>English</u> Passage-based reading with multiple-choice questions measuring understanding of:</p> <ul style="list-style-type: none"> • usage/mechanics: <ul style="list-style-type: none"> ○ punctuation ○ grammar and usage ○ sentence structure • rhetorical skills: <ul style="list-style-type: none"> ○ strategy ○ organization ○ style <p><u>Mathematics</u> Multiple-choice questions covering six content areas:</p> <ul style="list-style-type: none"> • pre-algebra • elementary algebra • intermediate algebra • coordinate geometry • plane geometry • trigonometry <p><u>Reading</u> Passage-based reading with multiple-choice questions measuring reading comprehension as a function of referring and reasoning skills, including understanding of vocabulary in context</p> <p><u>Science</u> Presents data representations, research summaries, and conflicting viewpoints with multiple-choice questions measuring ability to understand, analyze, and generalize scientific information</p> <p><u>Writing (optional)</u> Essay test measuring writing skills emphasized in high school English classes and in entry-level college composition courses</p>	<p><u>Critical Reading</u> Passage-based reading with multiple-choice-questions measuring:</p> <ul style="list-style-type: none"> • extended reasoning ability • literal comprehension • understanding of vocabulary in context <p>Multiple choice sentence completion questions measuring:</p> <ul style="list-style-type: none"> • knowledge of the meaning of words • ability to understand how sentence parts fit together <p><u>Mathematics</u> Multiple-choice and student-produced responses or grid-in questions covering four content areas:</p> <ul style="list-style-type: none"> • numbers and operations • algebra and functions • geometry and measurement • data analysis, statistics, and probability <p><u>Writing</u> Multiple-choice questions measuring ability to:</p> <ul style="list-style-type: none"> • improve sentences and paragraphs • identify sentence errors <p>Essay test measuring ability to:</p> <ul style="list-style-type: none"> • develop a point of view on an issue presented in an excerpt • support the point of view using reasoning and examples from reading, studies, experience, or observations • follow the conventions of standard written English

Note. Information contained in this table was compiled and summarized from resources available on the ACT, Inc., and College Board websites, including the *ACT Technical Manual* (ACT, 2007) and *Getting Ready for the SAT* (College Board, 2011a).

^aNot including the experimental section.

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Table 1 (continued)
A Brief Comparison of the SAT and ACT Examinations, 2011-12

Characteristic	ACT	SAT
Length	215 items: 2 hours, 55 minutes Optional writing section essay: 30 minutes	170 items: 2 hours, 55 minutes ^a 1 essay: 25 minutes
Penalty for incorrect answers	No penalty	Formula scoring: subtracts 1/4 point for each incorrect answer, except on student-produced response questions in the mathematics section
Scoring	The score on each of the four major sections ranges from 1 to 36. Composite score is the average of the four section scores. The optional writing section has two scores: (1) a combined English/writing scale score ranging from 1 to 36 and (2) a writing subscore ranging from 2 to 12.	The score on each of the three major sections ranges from 200 to 800 (in 10-point increments).
Score reporting	If a student takes the test multiple times, he or she can choose which scores to have sent to colleges.	If a student takes the test multiple times, he or she can choose which scores to have sent to colleges.
Cost of exam	\$34 plus an additional \$15.50 for the optional writing section	\$49

Note. Information contained in this table was compiled and summarized from resources available on the ACT, Inc., and College Board websites, including the *ACT Technical Manual* (ACT, 2007) and *Getting Ready for the SAT* (College Board, 2011a).

^aNot including the experimental section.

The writing section is 60 minutes in length and consists of 49 multiple-choice questions and a student-produced essay. The multiple-choice section assesses ability to understand grammatical elements and structures within sentences, recognize and identify sentence-level errors, improve sentences and paragraphs, recognize effective sentences, communicate ideas clearly, improve writing through revision and editing, and improve coherence of ideas within and between paragraphs. The student-produced essay requires students to develop and support a point of view on an issue presented in an excerpt using the conventions of standard written English.

The current version of the SAT was first administered to examinees in March 2005. The following modifications differentiate this version of the examination from the previous version: (a) the name of the examination was changed from SAT I: Reasoning Test to SAT; (b) the writing section was added; (c) the verbal section was renamed the critical reading section, the word analogy questions were removed, and short reading passages were added; and (d) the mathematics section was expanded to cover the third year of high school mathematics (Algebra II), and the quantitative comparison questions were removed. With these modifications, the testing time for the SAT increased from 3 hours to 3 hours, 20 minutes.

ACT. The ACT consists of five sections: English, mathematics, reading, science, and an optional writing section. The English section is 45 minutes in length and consists of 75 multiple-choice questions that assess understanding of the conventions of standard written English and rhetorical skills (ACT, 2012d). Specifically, the six elements assessed by this section are punctuation, grammar and usage, sentence structure, strategy, organization, and style.

The mathematics section is 60 minutes in length and consists of 60 multiple-choice questions that assess knowledge and skill in the areas of pre-algebra, elementary algebra, intermediate algebra, coordinate geometry, plane geometry, and trigonometry. The mathematics items are categorized

according to four levels: knowledge and skills, direct application, understanding concepts, and integrating conceptual understanding.

The reading section is 35 minutes in length and consists of 40 multiple-choice questions that assess reading comprehension by requiring examinees to understand what is explicitly stated, as well as what is implied, in text; and to draw conclusions, comparisons, and generalizations based on understanding of the passages presented. Specific skills assessed include the ability to determine main ideas, locate and interpret significant details, understand sequences of events, make comparisons, comprehend cause-effect relationships, use context to determine meaning, draw generalizations, and analyze voice and method.

The science section is 35 minutes in length and consists of 40 multiple-choice questions that assess skills required in the sciences, including interpretation, analysis, evaluation, reasoning, and problem solving. The content includes biology, chemistry, and earth/space sciences. The science items are constructed in three formats: data representation, requiring examinees to interpret information presented in graphs and tables; research summaries, requiring examinees to interpret experimental results; and conflicting viewpoints, requiring examinees to understand and analyze alternative viewpoints or hypotheses.

Designed to complement the English section of the test, the 30-minute writing section is optional and requires each examinee to write an essay, based on prompts, by presenting a position on an issue. The prompts describe an issue relevant to high school students and provide two different perspectives on the issue. Examinees are asked to support one of the two perspectives or develop a response based on their own perspective. The writing section allows students the opportunity to express judgments, develop and organize ideas, and use language clearly and effectively.

The basic structure and format of the ACT has remained the same since its inception in 1959. In 2003, the section formerly known as science reasoning was renamed science, and the optional writing section was added in February 2005 (ACT, 2007). The testing time for the ACT is 2 hours, 55 minutes. The writing test adds 30 minutes to the testing time.

SAT and ACT Scoring

Student performance on the SAT is reported as a scaled score, which is a normative standard score calculated from a raw score. Scaled scores on each section of the SAT range from 200 to 800 in 10-point increments. For the critical reading and mathematics sections of the SAT, the raw score equals the number of questions answered correctly minus a fraction of the number of multiple-choice questions answered incorrectly (see, e.g., College Board, 2011c). No points are deducted for unanswered questions or for wrong answers to student-produced response questions on the mathematics section. The writing scaled score is derived from: (a) a raw score calculated in the same manner as the critical reading and mathematics sections and (b) the essay score, which is the sum of two readers' scores.

Student performance on the ACT is reported as a scaled score that ranges from 1 to 36 in 1-point increments. For the English, mathematics, reading, and science sections of the ACT, the raw score equals the number of questions answered correctly, and no points are deducted for incorrect answers (ACT, Inc.,

2012c). Examinees also receive a composite score, calculated as the average of the English, mathematics, reading, and science scores. Students who complete the optional writing section receive a combined English/writing score on a scale of 1 to 36 and a writing subscore on a scale of 2 to 12.

Because the SAT and ACT may vary in difficulty from test form to test form or from year to year, the raw scores are not comparable. To allow for performance comparisons, the raw scores are converted to scaled scores. The statistical equating procedures used in the conversion ensure that any given scaled score indicates the same level of ability across test forms or testing dates.

Use of Individual SAT and ACT Scores in Texas

Academic Achievement Distinction Designations. Under the new Texas public school accountability system, introduced in 2013, academic achievement distinction designations (AADDs) recognize school districts and campuses for outstanding achievement in specified academic areas (Texas Education Agency, 2013; Texas Education Code [TEC] Chapter 39, Subchapter G, 2011). For 2013, a campus that earned an accountability rating of *Met Standard* was eligible to receive AADDs based on results across a number of indicators, including SAT/ACT examination participation and performance, in relation to a comparison group of campuses.

There were five campus-level AADD indicators for SAT and ACT examinations in 2013: (1) participation in SAT/ACT examinations; (2) performance in English language arts (ELA) on the SAT; (3) performance in ELA on the ACT; (4) performance in mathematics on the SAT; and (5) performance in mathematics on the ACT. The ELA indicators are based on performance on the critical reading and writing sections of the SAT and performance on the English and reading sections of the ACT. The mathematics indicators are based on performance on the mathematics section of each examination. The indicators were evaluated based on data for the class of 2012. For information about SAT/ACT calculations for AADDs, see *College Admissions Testing Glossary of Terms, Class of 2012* (TEA, 2015a).

Exemption From Texas Success Initiative Testing. In 1987, the Texas Legislature established a system of testing and remediation called the Texas Academic Skills Program, or TASP (TEC §51.306, 1988). In 2003, TASP was replaced by the Texas Success Initiative (TSI) (TEC §51.3062, 2004). Under the TSI, undergraduate students enrolling for the first time in public institutions of higher education are required to take an assessment to evaluate their readiness for freshman-level academic coursework (TEC §51.3062, 2011). The Texas Legislature allows exemptions from TSI assessment requirements based on student performance on the SAT, the ACT, and the state assessment (Title 19 of the Texas Administrative Code §4.54, 2015; TEC §51.3062, 2011). To qualify for an exemption based on the SAT or ACT, a student must receive a specified minimum score in one of the five years prior to enrollment in a public institution of higher education. On the SAT, a student must receive a score of 500 or higher on the critical reading or mathematics section of the examination and a score of 1070 or higher on the critical reading and mathematics sections combined. On the ACT, a student must receive a score of 19 or higher on the English or mathematics section of the examination and a composite score of 23 or higher.

Reporting of SAT and ACT Results by the Texas Education Agency

Data Sources

Texas public schools. The College Board provides TEA with annual examination results and demographic information for Texas public high school SAT examinees. Similarly, ACT, Inc., provides TEA with annual examination results and demographic information for Texas public high school ACT examinees. TEA receives scores from the testing companies based on year of graduation, rather than year of test administration. When registering for SAT or ACT examinations, students are asked to provide an expected year of graduation. The testing companies use information such as the student-reported expected year of graduation to determine whether to include examinees' scores in that reporting year. Students may take the SAT and ACT examinations more than once, but TEA receives and reports only the results of examinees' most recent examinations.

Data on public school student grade level, race/ethnicity, economic status, and gender, as well as other relevant district, campus, and student information, are obtained from the TEA Public Education Information Management System (PEIMS). College Board and ACT, Inc., data on race/ethnicity and gender for examinees are used when the equivalent PEIMS data are not available.

Sums of public school examinees by race/ethnicity, by economic status, or by gender may differ from one another or from the total of all examinees. Whereas counts of all examinees reflect all examinees reported by the testing companies, counts of examinees by race/ethnicity and by gender reflect examinees who could be found in PEIMS plus examinees who could not be found in PEIMS but for whom the specified demographic data were available from the testing companies. Examinees reported by the testing companies may not be found in PEIMS because of data reporting errors. Because data on economic status are not available from the testing companies, counts of examinees by economic status reflect only those examinees who could be found in PEIMS.

Combined public and nonpublic schools in Texas and in the United States. SAT and ACT results for public and nonpublic school graduates combined in Texas, other states, and in the United States were obtained, when available, from summary reports released annually by the College Board (College Board, 2012a) and ACT, Inc. (ACT, Inc., 2012a, 2012b), respectively. As is the case with testing data reported by TEA, annual reports provided by the testing agencies include only the results of examinees' most recent examinations. Additionally, results in the reports are based only on the scores of examinees identified by the College Board and ACT, Inc., as expecting to graduate in the reporting year.

The denominators for examination participation rates obtained from the College Board and ACT, Inc., are projected counts of graduating seniors reported by the Western Interstate Commission for Higher Education (WICHE). Participation rates not available from College Board or ACT, Inc., reports were derived by dividing counts of graduating examinees obtained from the testing companies by WICHE projections of graduating seniors.

The College Board reports SAT performance data for three separate Hispanic subgroups: Mexican American, Puerto Rican, and other Hispanic students. TEA uses these data to calculate results for

Hispanic students overall. Because of rounding, the average scores for Hispanic students on the critical reading and mathematics sections of the examination may not sum to the average critical reading and mathematics combined scores shown for the group.

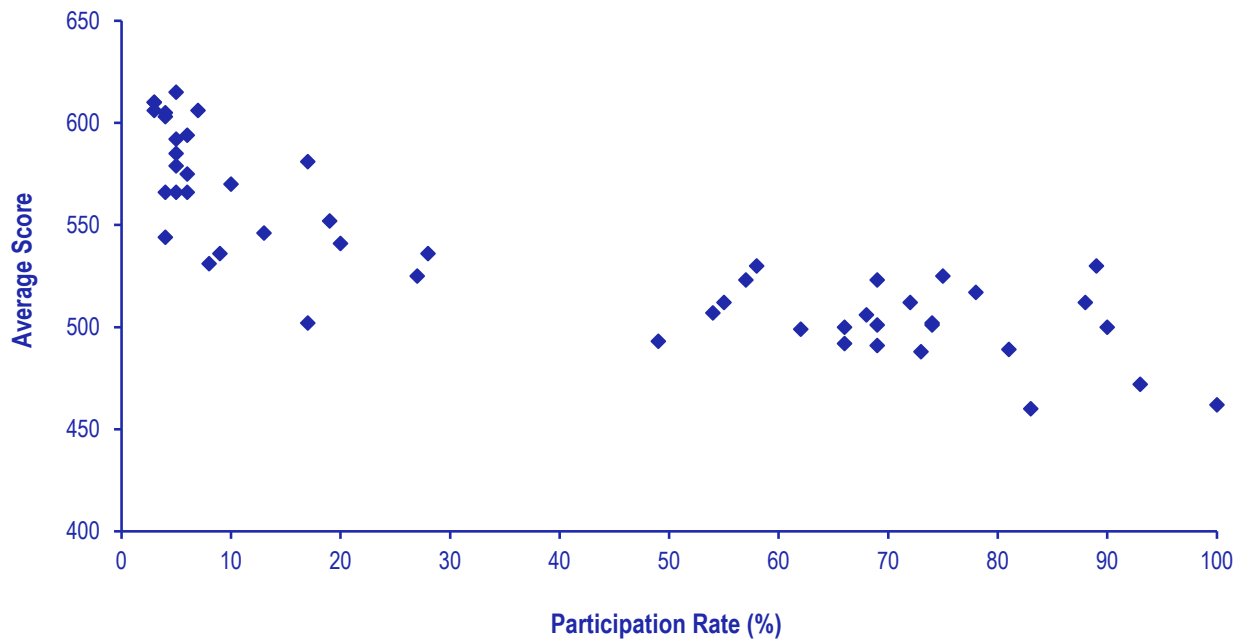
Interpretation of Results

The effect of group size. It may be informative to compare a group's average scores over time, but the reliability of such comparisons is dependent on the size of the group. When the group is small, reliability is reduced and caution should be used when interpreting year-to-year change. In general, changes in the average scores of a large group, such as White SAT examinees in Texas, are less likely to have occurred by chance than changes in the average scores of a small group, such as American Indian or Pacific Islander SAT examinees in Texas. Between-group comparisons are also dependent on the sizes of the groups. When groups differ substantially in size, comparisons of changes in scores between them can be misleading and, generally, are not appropriate. Among non-Hispanic SAT and ACT examinees in Texas, the American Indian, Pacific Islander, and multiracial populations are small in number, compared to other racial/ethnic groups. Therefore, discussions of test performance results for non-Hispanic students, including comparisons across racial/ethnic groups, do not include these populations in reports produced by the Division of Research and Analysis. Among Hispanic SAT and ACT examinees in Texas, the African American, Asian, Pacific Islander, and multiracial populations are small in number, compared to other racial/ethnic groups. Therefore, discussions of test performance results for Hispanic students, including comparisons across racial/ethnic groups, do not include these populations in reports produced by the Division of Research and Analysis.

The effect of participation rate. Because both the SAT and ACT are voluntary, a self-selected portion of the high school population takes the tests. In situations like this, the rate of participation plays an important role in the interpretation of average scores. Specifically, the accuracy of the estimate of the average score for a population on a given examination is dependent on the proportion of that population that takes the examination. For example, a 90 percent participation rate would generally yield an average score that is more representative of the population than a 10 percent participation rate. This effect of participation rate on reported average scores affects the kinds of group comparisons that can be made. Typically, in groups with low participation rates, the examinees have completed academically rigorous courses and apply to the nation's most selective scholarship programs and colleges (College Board, 2011b). Consequently, low participation rates generally result in inflated average score estimates. Assuming the average ability level of each population is in reality the same, the average score estimate for a population with a very low participation rate will usually be higher than the average score estimate for a population with a high participation rate.

The inverse relationship between participation rate and average score estimate is illustrated by SAT mathematics participation and performance data in the 50 states and the District of Columbia in 2012 (Figure 1 on page 8). As a state's participation rate increases, its average score estimate generally decreases. The relationship between participation and performance begins to stabilize at between 40 and 60 percent participation. Generally, bias in the estimate of a population's average score is reduced when

Figure 1
Relationship Between SAT Mathematics Participation and Performance for States, Class of 2012



Source. Primary data from College Board (2012b).

the participation rate is moderate to high. Participation rates directly affect the validity of comparisons among states, districts, campuses, and various student groups. Generally, comparisons of average SAT or ACT scores are most informative between groups with similar participation rates.

Participation rates over time. SAT and ACT participation rates can be affected by many factors, including varying graduation rates, availability of test fee waivers, availability of financial aid for higher education, and state mandating of participation in one of the examinations. The number of graduates is the denominator in SAT and ACT participation rate calculations, and the number of examinees is the numerator. In 2005, for the first time in nearly a decade, the number of students graduating from Texas public schools decreased (TEA, 2006). Because the decrease in graduates did not result from a decrease in enrollment, and because the numbers of SAT and ACT examinees increased, examination participation rates increased for all student groups in 2005. Shifts such as this should be taken into account when comparing participation rates over time.

Texas Education Code §39.0261 (2013) provides that high school students in the spring of the 11th grade or during the 12th grade may select and take once, at state cost, one of the valid, reliable, and nationally norm-referenced assessment instruments used by colleges and universities as part of their undergraduate admissions processes. Under the Texas College Preparation Program, TEA contracted with the College Board and ACT, Inc., to offer free SAT and ACT examinations in 2010 and 2011 to high school juniors enrolled in Texas public school districts and charters. The standard registration fees for the SAT and ACT were funded by TEA. Results for juniors who took TEA-funded SAT or ACT examinations in 2011 are presented in the reports *College Admissions Testing Performance Results for*

Graduating Seniors in Texas Public Schools, Class of 2012 (TEA, 2015c) and College Admissions Testing of Graduating Seniors in Texas and the United States, Class of 2012 (TEA, 2015b).

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Abstract. This report presents general information about the SAT and ACT, including descriptions of the examinations, uses of individual scores in Texas, data sources, and interpretation of results.

Keywords. *SAT, ACT, college admissions, testing, accountability, high school, scores, graduate.*

The report is available in PDF format on the agency website at http://tea.texas.gov/acctres/sat_act_index.html. Additional information about this report may be obtained by contacting the Texas Education Agency Division of Research and Analysis by phone at (512) 475-3523 or by e-mail at Research@tea.texas.gov.

For additional information about the SAT, contact the College Board Southwestern Regional Office at (512) 721-1800 or <http://www.collegeboard.com/>. For additional information about the ACT, contact ACT, Inc., Southwest Region, at (512) 345-1949 or <http://www.act.org/>.



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