



**SAT Suite**

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# Skills Insight for the Digital SAT<sup>®</sup> Suite

- **PSAT<sup>™</sup> 8/9**
- **PSAT/NMSQT<sup>®</sup> and PSAT<sup>™</sup> 10**
- **SAT<sup>®</sup>**

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# Skills Insight for the Digital SAT<sup>®</sup> Suite

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## About College Board

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# Introduction

This document provides an overview of the Skills Insight™ score interpretation framework for the digital SAT® Suite of Assessments. Skills Insight provides an easy and intuitive way for students and their families, teachers, and other users of digital SAT Suite data to better understand and make use of scores yielded by the tests of the suite, which consist of the SAT, PSAT/NMSQT®, PSAT™ 10, and PSAT™ 8/9 college and career readiness assessments produced by College Board.

Skills Insight describes the skills and knowledge that students scoring in particular ranges on digital SAT Suite assessments are likely able to demonstrate. Test takers receive Skills Insight information related to their performance levels as part of their online score reports, and anyone can access Skills Insight information on College Board's website ([satsuite.collegeboard.org/skills-insight](https://satsuite.collegeboard.org/skills-insight)).

This document serves to provide an overview of the Skills Insight framework. It includes the full sets of skill/knowledge statements across all performance score bands on the Reading and Writing and Math sections of the digital-suite tests as well as brief overviews of the test sections and information about how Skills Insight was developed.

This document is intended to help students and their families, teachers, and others more readily grasp the skills and knowledge that students scoring in particular ranges on the Reading and Writing and Math sections are typically able to demonstrate as well as how those capacities increase in sophistication and complexity at successively higher performance score bands. Examining the statements associated with a given set of scores and (if applicable) at higher score bands can help students and those working with them better understand test performance and how to improve it. A technical appendix describing how Skills Insight was created rounds out this document.

## The Digital SAT Suite

The *digital SAT Suite of Assessments* is College Board's collective term for its flagship suite of college and career readiness testing programs and services: the SAT, PSAT/NMSQT and PSAT 10, and PSAT 8/9. The digital suite represents an evolution of the SAT Suite that debuted in the 2015–2016 academic year and that was primarily administered on paper.

A full discussion of the tests can be found in the *Assessment Framework for the Digital SAT Suite*, a free digital resource ([satsuite.collegeboard.org/media/pdf/assessment-framework-for-digital-sat-suite.pdf](https://satsuite.collegeboard.org/media/pdf/assessment-framework-for-digital-sat-suite.pdf)).

## For More Information

For additional Skills Insight information, including digital SAT Suite exemplar test questions illustrating the skill/knowledge statements presented in this document, please visit [satsuite.collegeboard.org/skills-insight](https://satsuite.collegeboard.org/skills-insight).

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# Skills Insight for the Digital SAT Suite

Derived from a careful analysis of student performance on hundreds of actual digital SAT Suite questions, Skills Insight consists primarily of series of statements identifying what test takers scoring in particular *performance score bands* (ranges) on the Reading and Writing and Math sections of the digital-suite assessments typically know and can do in these subject areas. Relevant Skills Insight information is included in each student’s online score report. Accompanying these statements in those reports are sample digital SAT Suite test questions exemplifying the kinds and challenge level of questions that students scoring in each band are typically able to answer correctly. For manageability, this document omits those exemplars; a sidebar below indicates how readers can gain access to these exemplars if they wish.

The main value of Skills Insight is in helping students and their families, teachers, and others better understand what particular score ranges on the digital SAT Suite tests represent in terms of skill and knowledge acquisition. While many other features of the suite allow users to contextualize their results quantitatively—for example, in terms of percentile ranks—Skills Insight is unique in providing verbal descriptions of what scores typically mean in terms of the skills and knowledge test takers are generally able to demonstrate. Skills Insight information provides students and those supporting them with a clear sense of what skills and knowledge students likely exhibited on test day. Moreover, by looking at the statements in higher score bands (when applicable), students and their families, teachers, and others can get a sense of what additional and/or more sophisticated skills and knowledge students would need to obtain to enhance their college and career readiness and, in so doing, improve their scores in subsequent testing within the suite.

Skills Insight can also be a useful tool for secondary-level educators as they plan instruction. Because teachers and the digital SAT Suite share the goal of preparing all students to be ready to succeed in college and workforce training programs,

educators can consider how well their teaching aligns to the college and career readiness requirements in literacy and/or math embedded in Skills Insight. Teachers, administrators, and other educators can trust that the skill/knowledge statements included in Skills Insight reflect actual college and career readiness expectations because the digital SAT Suite tests are themselves built on a firm foundation of evidence regarding what students need to know and be able to do to be ready to succeed in their postsecondary educational endeavors.

## Components

Skills Insight consists of two main components:

- **Skill/knowledge statements** describing what students scoring in particular performance score bands on the Reading and Writing and Math sections of the digital SAT Suite tests are typically able to demonstrate.
- **Exemplar test questions** concretizing those statements by illustrating the kinds and rigor of test questions that students in various performance score bands are typically able to answer correctly.

Skills Insight’s **skill/knowledge statements** arose from close study by College Board subject matter and measurement experts of student performance on hundreds of actual digital SAT Suite test questions, from which a manageable number of generalizations has been derived. By their nature, these generalizations don’t capture every possible skill/knowledge element that could appear on the tests but rather focus on those most central to describing student achievement in given performance score bands and to differentiating achievement across those bands.

The Skills Insight statements should be read and understood cumulatively. That is, students scoring in a particular performance score band can generally demonstrate the skills and knowledge represented in the statements at their level as well as those associated with lower score bands.

Skills Insight statements are organized first by test section (Reading and Writing; Math) and then by performance score band. They’re further organized into four *content domains*, or conceptual categories of questions, for each of the sections. Table 1 displays these content domains.

**Table 1. Digital SAT Suite Content Domains, by Test Section.**

Reading and Writing Section	Math Section
Information and Ideas	Algebra
Craft and Structure	Advanced Math
Expression of Ideas	Problem-Solving and Data Analysis
Standard English Conventions	Geometry and Trigonometry (SAT, PSAT/NMSQT, and PSAT 10) / Geometry (PSAT 8/9)*

\* Trigonometry skills and knowledge are not assessed in PSAT 8/9.

Each content domain (e.g., Information and Ideas in Reading and Writing; Algebra in Math) represents a broad topic area whose centrality to college and career readiness has been empirically established by College Board research.

The usefulness of Skills Insight is greatly enhanced by the fact that the tests of the digital SAT Suite are on a common vertical scale. Being on a vertical scale allows for student growth to be meaningfully tracked across assessments in the suite because any given score carries the same meaning with respect to achievement regardless of from which test it was obtained. A 530 on the PSAT 8/9 Math section, for example, represents the same level of achievement as would a 530 on the Math sections of the PSAT/NMSQT, PSAT 10, or SAT. Vertical scaling is possible because the various tests of the digital suite assess the same knowledge and skills, with relatively minor exceptions reflecting appropriate age/grade attainment expectations across grades 8 through 12. As a result, there’s a single set of Skills Insight for all four tests of the suite (with some testing program–specific callouts in Math), and students taking any of the tests can make use of the same skill/knowledge progressions to chart their progress across the secondary grades.

The digital-suite tests’ score scales are somewhat staggered across programs. That is, the section and total scales for each subsequent testing program have higher “floors” (minimum scores) and “ceilings” (maximum scores). This feature facilitates vertical scaling by offering students in successively higher grades the opportunity to demonstrate higher levels of achievement.

Table 2 summarizes the section-level and total-score scales of the digital SAT Suite tests.

**Table 2. Digital SAT Suite Score Scales.**

Digital SAT Suite Testing Program	Score Scales	
	Section	Total (sum of section scores)
SAT	200–800, in 10-point increments	400–1600, in 10-point increments
PSAT/NMSQT and PSAT 10	160–760, in 10-point increments	320–1520, in 10-point increments
PSAT 8/9	120–720, in 10-point increments	240–1440, in 10-point increments

For Skills Insight, the score scales for the digital SAT Suite Reading and Writing and Math sections have been divided into seven ranges, or *performance score bands*. Ranges rather than score points (e.g., 570) were used in developing Skills Insight to ensure that meaningful differences in terms of the skills and knowledge students can typically demonstrate could be identified. Score band 1 represents the lowest range of achievement on the digital SAT Suite tests, while score band 7 represents the highest.

Table 3 presents the section scale score ranges corresponding to the seven performance score bands in Skills Insight. Note that the ranges vary slightly between Reading and Writing and Math in the middle of the distribution.



**Table 3. Skills Insight Performance Score Bands, by Digital SAT Suite Test Section.**

Performance Score Band	Section Score	
	Reading and Writing	Math
1	<370	<370
2	370–410	370–410
3	420–480	420–460
4	490–540	470–540
5	550–600	550–600
6	610–670	610–670
7	680–800	680–800

These performance score bands were determined in relation to key and easily recognized percentiles on the digital-suite score scale. Performance band 2, for instance, begins at 370, which corresponds to the 25th percentile on the PSAT 8/9 test, while performance band 3 begins at 420, which corresponds to the 50th percentile of the PSAT 8/9 test and the 25th percentile of the PSAT/NMSQT and PSAT 10 tests. A full explanation of how the bands were determined appears in the methodology appendix at the end of this document.

These score bands encompass the various benchmark scores College Board has empirically established for the digital SAT Suite. *College and Career Readiness Benchmarks* mark the points on the score scales at or above which students are considered college and career ready (i.e., have a high likelihood of succeeding in common entry-level credit-bearing postsecondary courses), while *grade-level benchmarks* help students and their families, teachers, and others track progress toward college and career readiness. Table 4 lists the Reading and Writing and Math benchmark scores according to the testing program(s) to which they are most relevant given the age and attainment of the typical test-taking population. In parentheses following each score is the corresponding Skills Insight performance score band.

**Table 4. Digital SAT Suite Benchmark Scores and (Corresponding Skills Insight Performance Score Bands).**

Benchmark (Skills Insight Score Band)	Benchmark Score (Skills Insight Performance Score Band) by Digital SAT Suite Testing Program and Test Section					
	SAT		PSAT/NMSQT and PSAT 10		PSAT 8/9	
	Reading and Writing	Math	Reading and Writing	Math	Reading and Writing	Math
College and Career Readiness	480 (3)	530 (4)				
Eleventh grade*	460 (3)	510 (4)	460 (3)	510 (4)		
Tenth grade*			430 (3)	480 (4)		
Ninth grade*					410 (2)	450 (3)
Eighth grade*					390 (2)	430 (3)

\* Grade-level benchmarks are subject to potential revision by College Board as more operational data for the digital SAT Suite become available.

### Percentiles Example

A student scoring at the 25th percentile on the PSAT 8/9 test has performed as well as or better than 25 percent of PSAT 8/9 test takers, while 75 percent of PSAT 8/9 test takers performed better than the student.

Supplementing the skill/knowledge statements at each performance score band for each test section are **exemplar digital SAT Suite test questions**. These questions are meant to illustrate the kinds and rigor of test questions that students scoring in particular bands are typically able to answer correctly. Like the skill/knowledge statements, these exemplars don't represent every sort of test question that may be asked in each section, but they do serve to make the accompanying skill/knowledge statements more concrete and easily interpreted.

## Limitations on Use

While Skills Insight provides a useful framework for digital SAT Suite score interpretation, users should bear in mind several caveats.

- Although evidence indicates that attainment of all the skills and knowledge included in the digital SAT Suite tests is prerequisite to college and career readiness and success in a broad range of fields, Skills Insight, and the tests themselves, shouldn't be interpreted as representing all the skills and knowledge that students can and should acquire in their secondary school years, nor should instruction be narrowed to address only those capacities reflected in Skills Insight.
- The skill/knowledge statements included in Skills Insight are generalizations based on the performance of thousands of digital SAT Suite test takers on hundreds of actual test questions. They thus describe *typical* performance at given score bands and don't necessarily fully describe the performance of any one student. The statements (and accompanying exemplar test questions) should thus be used with caution in attempts to describe the capabilities of individual students and only in conjunction with other achievement indicators, such as students' course grades and teachers' assessments.
- While Skills Insight statements cover all four content domains for each of the two sections of the digital SAT Suite tests, they don't address every possible testing point at every performance score band, nor is every question type represented among the exemplars. Those interested in a fuller discussion of the tests and their content are encouraged to consult additional College Board resources, such as the *Assessment Framework for the Digital SAT Suite* ([satsuite.collegeboard.org/media/pdf/assessment-framework-for-digital-sat-suite.pdf](https://satsuite.collegeboard.org/media/pdf/assessment-framework-for-digital-sat-suite.pdf)) or the *Official Digital SAT Study Guide*, which can be purchased from a wide range of booksellers or directly from College Board.

## Structure of This Document

The following pages present Skills Insight for the digital SAT Suite assessments, beginning with the Reading and Writing section and continuing with the Math section. Each discussion provides a brief overview of the relevant test section and its composition. The main portion of each discussion centers on the relevant Skills Insight skill/knowledge statements. Because it uses some terms of art, the Reading and Writing discussion concludes with further details on some of the key concepts introduced in the skill/knowledge statements. The document's appendix provides a fuller discussion of the process College Board used to create Skills Insight.

## Accessing the Exemplar Questions

Exemplar questions associated with Skills Insight performance score bands can be accessed at [satsuite.collegeboard.org/skills-insight](https://satsuite.collegeboard.org/skills-insight).

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# The Reading and Writing Section

The Reading and Writing section of the digital SAT Suite assessments is designed to measure students' attainment of critical college and career readiness prerequisites in literacy in English language arts as well as in various academic disciplines, including literature, history/social studies, the humanities, and science. The Reading and Writing section focuses on key elements of comprehension, rhetoric, and language use that the best available evidence identifies as necessary for postsecondary readiness and success. Over the course of a Reading and Writing section of one of the digital SAT Suite assessments, students answer multiple-choice questions requiring them to read, comprehend, and use information and ideas in texts; analyze the craft and structure of texts; revise texts to improve the rhetorical expression of ideas; and edit texts to conform to core conventions of Standard English.

Questions on the Reading and Writing section represent one of four categories known as *content domains*:

- **Information and Ideas**, for which students must use comprehension, analysis, and reasoning skills and knowledge as well as what's stated and implied in texts (including in any accompanying informational graphics) to locate, interpret, evaluate, and integrate information and ideas.
- **Craft and Structure**, for which students must use comprehension, vocabulary, analysis, synthesis, and reasoning skills and knowledge to use and determine the meaning of high-utility academic words and phrases in context, evaluate texts rhetorically, and make supportable connections between multiple topically related texts.
- **Expression of Ideas**, for which students must use revision skills and knowledge to improve the effectiveness of written expression in accordance with specified rhetorical goals.
- **Standard English Conventions**, for which students must use editing skills and knowledge to make text conform to core conventions of Standard English sentence structure, usage, and punctuation.

The Skills Insight skill/knowledge statements for the Reading and Writing section are arranged by these content domains as well as by performance score band, placement into which is determined by the test taker’s Reading and Writing section score.

The following tables present the Reading and Writing Skills Insight statements in two ways.

- Table 5 provides a summative view of Skills Insight for the Reading and Writing section, including all content domains across all performance score bands. This table is particularly useful for gaining a grasp of the framework as a whole and how the skills and knowledge elements described become progressively more sophisticated in each successive score band.
- Table 6 (Information and Ideas), table 7 (Craft and Structure), table 8 (Expression of Ideas), and table 9 (Standard English Conventions) provide the Reading and Writing skill/knowledge statements broken out by content domains so that it’s easy to trace how particular skill/knowledge elements develop at successively higher performance score bands. These tables don’t introduce new information but rather re-present the information in table 5 in easier-to-digest breakouts by content domain.

### Why Are There No Statements for Reading and Writing Performance Score Band 1?

Skills Insight statements are generalizations based on student performance. One aspect of student performance associated with the lowest score band for the Reading and Writing section is that these students, as a group, don’t answer enough questions correctly to allow College Board to draw meaningful, empirically based generalizations about the skills and knowledge they can typically demonstrate. This fact shouldn’t be interpreted as College Board implying that these students lack any notable literacy-related skills and knowledge but rather that they’re working to obtain foundational skills necessary to be college ready.

**Table 5. Reading and Writing Section: Skills Insight Overview.**

Performance Score Band	Section Score Scale Range	Content Domain	Skill/Knowledge Statements
1	<370	Information and Ideas	Students in this performance score band are beginning to obtain foundational skills to be college ready.
		Craft and Structure	
		Expression of Ideas	
		Standard English Conventions	
2	370–410	Information and Ideas	<ul style="list-style-type: none"> <li>Determine the most effective literary quotation to illustrate a straightforward claim about a character, setting, or theme</li> <li>Locate relevant data points in informational graphics associated with passages at the middle grades level</li> </ul>
		Craft and Structure	<ul style="list-style-type: none"> <li>Determine the most logical and precise high-utility academic word or phrase to use in simple contexts and when the focal words and phrases are encountered frequently in texts at the middle grades level</li> <li>Describe the function of a portion (e.g., a phrase or sentence) of a passage at the middle grades level in the context of the passage as a whole</li> </ul>
		Expression of Ideas	<ul style="list-style-type: none"> <li>Determine the most effective transition word or phrase to introduce a supporting example (e.g., <i>for instance</i>)</li> <li>Determine the most effective transition word or phrase to indicate a logical relationship of time or sequence (e.g., <i>later</i> or <i>next</i>)</li> </ul>
		Standard English Conventions	<ul style="list-style-type: none"> <li>Maintain grammatical agreement between a subject and verb positioned closely together within a sentence</li> <li>Determine correct verb formation in a fairly straightforward sentence</li> </ul>

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Performance Score Band	Section Score Scale Range	Content Domain	Skill/Knowledge Statements
3	420–480	Information and Ideas	<ul style="list-style-type: none"> <li>Determine the most effective textual evidence (e.g., an additional finding; a quotation from a scholar) to support a claim in passages at the middle grades level as well as some at the high school level</li> <li>Accurately identify explicitly stated and implicitly conveyed details in passages at the high school level</li> </ul>
		Craft and Structure	<ul style="list-style-type: none"> <li>Determine the most logical and precise high-utility academic word or phrase to use in moderately simple contexts and when the focal words and phrases are encountered frequently in texts at the middle grades level</li> <li>Determine the meaning of a high-utility academic word or phrase in literary passages at the middle grades level</li> <li>Describe the main purpose of passages at the middle grades level</li> </ul>
		Expression of Ideas	<ul style="list-style-type: none"> <li>Determine the most effective transition word or phrase to establish a logical relationship between two directly contrasting statements (e.g., <i>however</i>)</li> <li>Synthesize information from several statements to emphasize a similarity or difference</li> </ul>
		Standard English Conventions	<ul style="list-style-type: none"> <li>Maintain consistent verb tense in a sentence using two or more verbs in simple past or present tense</li> <li>Determine when the possessive and/or plural form of a singular noun is required by the sense of a sentence</li> <li>Maintain grammatical agreement between a subject pronoun and its singular referent</li> </ul>
4	490–540	Information and Ideas	<ul style="list-style-type: none"> <li>Determine the main idea of passages at the high school level</li> <li>Make basic comparisons (e.g., determine highest/lowest value) among relevant data in informational graphics associated with passages at the middle grades level</li> </ul>
		Craft and Structure	<ul style="list-style-type: none"> <li>Determine the most logical and precise high-utility academic word or phrase to use in moderately complex contexts and when the focal words and phrases are encountered frequently in texts at the high school level</li> <li>Determine the meaning of a high-utility academic word or phrase, including the literal sense of a figurative word or phrase, in literary passages at the high school level</li> <li>Describe the function of a portion (e.g., a phrase or sentence) of a passage at the high school level in the context of the passage as a whole</li> </ul>
		Expression of Ideas	<ul style="list-style-type: none"> <li>Determine the most effective transition word or phrase to indicate a cause-effect relationship between two statements (e.g., <i>therefore</i>)</li> <li>Synthesize information from several statements to emphasize a single feature or explain a concept</li> </ul>
		Standard English Conventions	<ul style="list-style-type: none"> <li>Use a comma to mark a boundary between a main clause and a supplementary phrase within a sentence</li> <li>Use a period to punctuate the end of a declarative sentence, thereby avoiding creating a comma splice or run-on sentence</li> <li>Maintain grammatical agreement between a noun and its pronoun in a straightforward sentence in which the pronoun precedes the referent</li> </ul>

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Performance Score Band	Section Score Scale Range	Content Domain	Skill/Knowledge Statements
5	550–600	Information and Ideas	<ul style="list-style-type: none"> <li>• Draw a reasonable text-based inference from passages at the middle grades level as well as some at the high school level</li> <li>• Make comparisons among relevant data in informational graphics associated with passages at the high school level in order to complete an example or illustrate or support a straightforward claim</li> </ul>
		Craft and Structure	<ul style="list-style-type: none"> <li>• Determine the most logical and precise high-utility academic word or phrase to use in complex contexts and when the focal words and phrases are encountered frequently in texts at the high school level</li> <li>• Describe the main purpose of passages at the high school level when the authors' goals are unstated</li> <li>• Draw a text-supported connection between two passages at the middle grades level on the same or similar topics</li> </ul>
		Expression of Ideas	<ul style="list-style-type: none"> <li>• Determine the most effective transition word or phrase to signal a shift from a general discussion to a more specific case or example (e.g., <i>specifically</i>) or introduce a restatement of information (e.g., <i>in short</i>)</li> <li>• Synthesize information from several complex statements to provide an explanation or form a comparison</li> </ul>
		Standard English Conventions	<ul style="list-style-type: none"> <li>• Use a semicolon to mark the boundary between two closely related independent clauses when the clauses are joined by a conjunctive adverb (e.g., <i>however</i>)</li> <li>• Use commas to set off an interrupting nonessential sentence element</li> </ul>
6	610–670	Information and Ideas	<ul style="list-style-type: none"> <li>• Draw a reasonable text-based inference from passages at the high school level as well as some at the early college level</li> <li>• Determine the most effective literary quotation to support or illustrate an analytical claim about passages at the early college level</li> <li>• Interpret and integrate relevant data from informational graphics associated with passages at the high school level in order to support a claim</li> </ul>
		Craft and Structure	<ul style="list-style-type: none"> <li>• Determine the most logical and precise high-utility academic word or phrase to use in complex contexts and when the focal words and phrases are encountered frequently in texts at the early college level</li> <li>• Draw a text-supported connection between two passages at the high school level on the same or similar topics</li> <li>• Describe the function of a portion (e.g., a phrase or sentence) of a passage at the early college level in the context of the passage as a whole</li> </ul>
		Expression of Ideas	<ul style="list-style-type: none"> <li>• Determine the most effective transition word or phrase to emphasize a point within a discussion (e.g., <i>in fact</i>)</li> <li>• Synthesize information from several complex statements to provide a concise summary</li> </ul>
		Standard English Conventions	<ul style="list-style-type: none"> <li>• Eliminate unnecessary punctuation in challenging situations (e.g., between a long subject and the predicate or between two coordinate elements in a sentence)</li> <li>• Use a colon to introduce an elaboration (e.g., a list of examples; a noun phrase renaming a previously mentioned concept)</li> <li>• Use a period or semicolon to mark the boundary between two sentences when the boundary is subtle or requires careful reading to establish</li> </ul>

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Performance Score Band	Section Score Scale Range	Content Domain	Skill/Knowledge Statements
7	680–800	Information and Ideas	<ul style="list-style-type: none"> <li>• Draw a reasonable text-based inference from passages at the early college level</li> <li>• Determine the most effective textual evidence (e.g., a finding of a research study) to support or refute a claim in passages at the early college level</li> <li>• Interpret and integrate relevant data from informational graphics associated with passages at the early college level in order to support or refute a claim</li> </ul>
		Craft and Structure	<ul style="list-style-type: none"> <li>• Determine the most logical and precise high-utility academic word or phrase to use in highly complex contexts and when the focal words and phrases are encountered frequently in texts at the early college level</li> <li>• Draw a subtle text-supported connection between two passages at the early college level on the same or similar topics</li> </ul>
		Expression of Ideas	<ul style="list-style-type: none"> <li>• Determine the most effective transition word or phrase to indicate an exception or counterpoint (e.g., <i>granted</i>)</li> <li>• Synthesize information from several complex statements to make a rhetorically effective generalization</li> </ul>
		Standard English Conventions	<ul style="list-style-type: none"> <li>• Maintain grammatical agreement between a subject and verb in relatively complex sentences in which a substantial amount of text appears between the subject and main verb</li> <li>• Properly incorporate a restrictive sentence element, such as an appositive phrase modifying a noun phrase</li> <li>• Use a colon to introduce an independent clause elaborating on a statement or claim</li> </ul>

**Table 6. Reading and Writing Section: Skills Insight—Information and Ideas Content Domain.**

<b>Performance Score Band</b>	<b>Information and Ideas Content Domain: Skill/Knowledge Statements</b>
1	Students in this performance score band are beginning to obtain foundational skills to be college ready.
2	<ul style="list-style-type: none"> <li>• Determine the most effective literary quotation to illustrate a straightforward claim about a character, setting, or theme</li> <li>• Locate relevant data points in informational graphics associated with passages at the middle grades level</li> </ul>
3	<ul style="list-style-type: none"> <li>• Determine the most effective textual evidence (e.g., an additional finding; a quotation from a scholar) to support a claim in passages at the middle grades level as well as some at the high school level</li> <li>• Accurately identify explicitly stated and implicitly conveyed details in passages at the high school level</li> </ul>
4	<ul style="list-style-type: none"> <li>• Determine the main idea of passages at the high school level</li> <li>• Make basic comparisons (e.g., determine highest/lowest value) among relevant data in informational graphics associated with passages at the middle grades level</li> </ul>
5	<ul style="list-style-type: none"> <li>• Draw a reasonable text-based inference from passages at the middle grades level as well as some at the high school level</li> <li>• Make comparisons among relevant data in informational graphics associated with passages at the high school level in order to complete an example or illustrate or support a straightforward claim</li> </ul>
6	<ul style="list-style-type: none"> <li>• Draw a reasonable text-based inference from passages at the high school level as well as some at the early college level</li> <li>• Determine the most effective literary quotation to support or illustrate an analytical claim about passages at the early college level</li> <li>• Interpret and integrate relevant data from informational graphics associated with passages at the high school level in order to support a claim</li> </ul>
7	<ul style="list-style-type: none"> <li>• Draw a reasonable text-based inference from passages at the early college level</li> <li>• Determine the most effective textual evidence (e.g., a finding of a research study) to support or refute a claim in passages at the early college level</li> <li>• Interpret and integrate relevant data from informational graphics associated with passages at the early college level in order to support or refute a claim</li> </ul>



**Table 7. Reading and Writing Section: Skills Insight—Craft and Structure Content Domain.**

Performance Score Band	Craft and Structure Content Domain: Skill/Knowledge Statements
1	Students in this performance score band are beginning to obtain foundational skills to be college ready.
2	<ul style="list-style-type: none"> <li>• Determine the most logical and precise high-utility academic word or phrase to use in simple contexts and when the focal words and phrases are encountered frequently in texts at the middle grades level</li> <li>• Describe the function of a portion (e.g., a phrase or sentence) of a passage at the middle grades level in the context of the passage as a whole</li> </ul>
3	<ul style="list-style-type: none"> <li>• Determine the most logical and precise high-utility academic word or phrase to use in moderately simple contexts and when the focal words and phrases are encountered frequently in texts at the middle grades level</li> <li>• Determine the meaning of a high-utility academic word or phrase in literary passages at the middle grades level</li> <li>• Describe the main purpose of passages at the middle grades level</li> </ul>
4	<ul style="list-style-type: none"> <li>• Determine the most logical and precise high-utility academic word or phrase to use in moderately complex contexts and when the focal words and phrases are encountered frequently in texts at the high school level</li> <li>• Determine the meaning of a high-utility academic word or phrase, including the literal sense of a figurative word or phrase, in literary passages at the high school level</li> <li>• Describe the function of a portion (e.g., a phrase or sentence) of a passage at the high school level in the context of the passage as a whole</li> </ul>
5	<ul style="list-style-type: none"> <li>• Determine the most logical and precise high-utility academic word or phrase to use in complex contexts and when the focal words and phrases are encountered frequently in texts at the high school level</li> <li>• Describe the main purpose of passages at the high school level when the authors’ goals are unstated</li> <li>• Draw a text-supported connection between two passages at the middle grades level on the same or similar topics</li> </ul>
6	<ul style="list-style-type: none"> <li>• Determine the most logical and precise high-utility academic word or phrase to use in complex contexts and when the focal words and phrases are encountered frequently in texts at the early college level</li> <li>• Draw a text-supported connection between two passages at the high school level on the same or similar topics</li> <li>• Describe the function of a portion (e.g., a phrase or sentence) of a passage at the early college level in the context of the passage as a whole</li> </ul>
7	<ul style="list-style-type: none"> <li>• Determine the most logical and precise high-utility academic word or phrase to use in highly complex contexts and when the focal words and phrases are encountered frequently in texts at the early college level</li> <li>• Draw a subtle text-supported connection between two passages at the early college level on the same or similar topics</li> </ul>

**Table 8. Reading and Writing Section: Skills Insight—Expression of Ideas Content Domain.**

Performance Score Band	Expression of Ideas Content Domain: Skill/Knowledge Statements
1	Students in this performance score band are beginning to obtain foundational skills to be college ready.
2	<ul style="list-style-type: none"> <li>• Determine the most effective transition word or phrase to introduce a supporting example (e.g., <i>for instance</i>)</li> <li>• Determine the most effective transition word or phrase to indicate a logical relationship of time or sequence (e.g., <i>later</i> or <i>next</i>)</li> </ul>
3	<ul style="list-style-type: none"> <li>• Determine the most effective transition word or phrase to establish a logical relationship between two directly contrasting statements (e.g., <i>however</i>)</li> <li>• Synthesize information from several statements to emphasize a similarity or difference</li> </ul>
4	<ul style="list-style-type: none"> <li>• Determine the most effective transition word or phrase to indicate a cause-effect relationship between two statements (e.g., <i>therefore</i>)</li> <li>• Synthesize information from several statements to emphasize a single feature or explain a concept</li> </ul>
5	<ul style="list-style-type: none"> <li>• Determine the most effective transition word or phrase to signal a shift from a general discussion to a more specific case or example (e.g., <i>specifically</i>) or introduce a restatement of information (e.g., <i>in short</i>)</li> <li>• Synthesize information from several complex statements to provide an explanation or form a comparison</li> </ul>
6	<ul style="list-style-type: none"> <li>• Determine the most effective transition word or phrase to emphasize a point within a discussion (e.g., <i>in fact</i>)</li> <li>• Synthesize information from several complex statements to provide a concise summary</li> </ul>
7	<ul style="list-style-type: none"> <li>• Determine the most effective transition word or phrase to indicate an exception or counterpoint (e.g., <i>granted</i>)</li> <li>• Synthesize information from several complex statements to make a rhetorically effective generalization</li> </ul>

**Table 9. Reading and Writing Section: Skills Insight—Standard English Conventions Content Domain.**

Performance Score Band	Standard English Conventions Content Domain: Skill/Knowledge Statements
1	Students in this performance score band are beginning to obtain foundational skills to be college ready.
2	<ul style="list-style-type: none"> <li>• Maintain grammatical agreement between a subject and verb positioned closely together within a sentence</li> <li>• Determine correct verb formation in a fairly straightforward sentence</li> </ul>
3	<ul style="list-style-type: none"> <li>• Maintain consistent verb tense in a sentence using two or more verbs in simple past or present tense</li> <li>• Determine when the possessive and/or plural form of a singular noun is required by the sense of a sentence</li> <li>• Maintain grammatical agreement between a subject pronoun and its singular referent</li> </ul>
4	<ul style="list-style-type: none"> <li>• Use a comma to mark a boundary between a main clause and a supplementary phrase within a sentence</li> <li>• Use a period to punctuate the end of a declarative sentence, thereby avoiding creating a comma splice or run-on sentence</li> <li>• Maintain grammatical agreement between a noun and its pronoun in a straightforward sentence in which the pronoun precedes the referent</li> </ul>
5	<ul style="list-style-type: none"> <li>• Use a semicolon to mark the boundary between two closely related independent clauses when the clauses are joined by a conjunctive adverb (e.g., <i>however</i>)</li> <li>• Use commas to set off an interrupting nonessential sentence element</li> </ul>
6	<ul style="list-style-type: none"> <li>• Eliminate unnecessary punctuation in challenging situations (e.g., between a long subject and the predicate or between two coordinate elements in a sentence)</li> <li>• Use a colon to introduce an elaboration (e.g., a list of examples; a noun phrase renaming a previously mentioned concept)</li> <li>• Use a period or semicolon to mark the boundary between two sentences when the boundary is subtle or requires careful reading to establish</li> </ul>
7	<ul style="list-style-type: none"> <li>• Maintain grammatical agreement between a subject and verb in relatively complex sentences in which a substantial amount of text appears between the subject and main verb</li> <li>• Properly incorporate a restrictive sentence element, such as an appositive phrase modifying a noun phrase</li> <li>• Use a colon to introduce an independent clause elaborating on a statement or claim</li> </ul>

## Key Concepts

This section briefly discusses two important concepts introduced in the Reading and Writing skill/knowledge statements that benefit from elaboration.

### TEXT COMPLEXITY

The skill/knowledge statements for the Reading and Writing section’s Skills Insight framework include numerous references to text complexity levels, specifically *middle grades–level texts*, *high school–level texts*, and *early college–level texts*. These levels correspond to texts commonly assigned in grades 6–8, grades 9–11, and grades 12–14, respectively.

College Board test development staff use a sophisticated quantitative tool in conjunction with a qualitative rubric (see sidebar) to determine the complexity of the passages used in the Reading and Writing section.

As evidenced by the skill/knowledge statements for the Reading and Writing section, students scoring in progressively higher performance score bands on the digital SAT Suite tests are typically able to read and comprehend texts of successively higher levels of complexity, up to and including texts whose challenge level is comparable to those encountered in early postsecondary coursework.

### HIGH-UTILITY ACADEMIC VOCABULARY

Certain skill/knowledge statements for the Craft and Structure content domain refer to students’ capacity to work with *high-utility academic vocabulary*. This category, also known as tier two vocabulary, consists of words and phrases readers often encounter in texts, especially higher-complexity texts, but relatively seldom in everyday speech and that are found in texts across a range of subjects rather than restricted to those associated with a particular domain of knowledge, such as history or science. Examples of high-utility academic words and phrases include *directly*, *ambivalent*, *convey*, *demand*, *credit* (as in to believe), *favor* (as in to give preference to), and *document* (as in to record).

### Companion Resource

Chapter 1 of the *Classroom Practice Guide for the Digital SAT Suite: English Language Arts/Literacy*, a free publication produced by College Board ([satsuite.collegeboard.org/media/pdf/sat-suite-classroom-practice-english-language-arts-literacy.pdf](https://satsuite.collegeboard.org/media/pdf/sat-suite-classroom-practice-english-language-arts-literacy.pdf)), addresses in depth the topic of text complexity, including why it’s a critical consideration in students’ college and career readiness as well as how it can be measured. That chapter also includes the qualitative text complexity rubric used by College Board’s test developers along with exemplar texts at various complexity levels.

### Companion Resource

Chapter 3 of the *Classroom Practice Guide for the Digital SAT Suite: English Language Arts/Literacy* (see URL above) covers the importance of vocabulary (and knowledge) to students’ attainment of college and career readiness and includes an overview of the concept of high-utility academic vocabulary as well as how such vocabulary can be acquired by students.

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# The Math Section

The Math section of the digital SAT Suite assessments is designed to measure students' attainment of critical college and career readiness prerequisites in math. The digital SAT Suite Math section focuses on key elements of algebra, advanced math, problem-solving and data analysis, and geometry and (SAT, PSAT/NMSQT, and PSAT 10 only) trigonometry that the best available evidence identifies as necessary for postsecondary readiness and success. Over the course of the Math section of one of the digital SAT Suite assessments, students answer multiple-choice and student-produced response (SPR) questions that measure their fluency with, understanding of, and ability to apply the math concepts, skills, and practices that are most essential for readiness for entry-level postsecondary work.

Questions in the Math section represent one of four categories known as *content domains*:

- **Algebra**, for which students must analyze, fluently solve, and create linear equations and inequalities as well as analyze and fluently solve systems of equations using multiple techniques.
- **Advanced Math**, for which students must demonstrate attainment of skills and knowledge central for successful progression to more advanced math courses, including analyzing, fluently solving, interpreting, and creating equations, including absolute value, quadratic, exponential, polynomial, rational, radical, and other nonlinear equations, as well as analyzing and fluently solving systems of linear and nonlinear equations in two variables.
- **Problem-Solving and Data Analysis**, for which students must apply quantitative reasoning about ratios, rates, and proportional relationships; understand and apply unit rate; and analyze and interpret one- and two-variable data.
- **Geometry and Trigonometry** (SAT, PSAT/NMSQT, and PSAT 10) / **Geometry** (PSAT 8/9), for which students must solve problems that focus on perimeter, area, and volume; angles, triangles, and trigonometry; and circles.

The Skills Insight skill/knowledge statements for the Math section are arranged by these content domains as well as by performance score band, placement into which is determined by the test taker’s Math section score.

The following tables present the Math Skills Insight statements in two ways.

- Table 10 provides a summative view of Skills Insight for the Math section, including all content domains across all performance score bands. This table is particularly useful for gaining a grasp of the framework as a whole and how the skills and knowledge elements described become progressively more sophisticated in each successive score band.
- Table 11 (Algebra), table 12 (Advanced Math), table 13 (Problem-Solving and Data Analysis), and table 14 (Geometry and Trigonometry / Geometry) provide the Math skill/knowledge statements broken out by content domains so that it’s easy to trace how particular skill/knowledge elements develop at successively higher performance score bands. These tables don’t introduce new information but rather re-present the information in table 10 in easier-to-digest breakouts by content domain.

Note that some skill/knowledge statements in the following tables apply only to certain digital SAT Suite program levels. These are called out with the parenthetical references such as “(SAT only)” or “(SAT, PSAT/NMSQT, and PSAT 10 only).” Unless so marked, a skill/knowledge statement applies to all tests in the digital SAT Suite.

**Table 10. Math Section: Skills Insight Overview.**

Performance Score Band	Section Score Scale Range	Content Domain	Skill/Knowledge Statements
1	<370	Algebra	<ul style="list-style-type: none"> <li>Within a context, create and/or solve a simple equation in one variable</li> <li>Solve a simple one-step linear equation in one variable</li> </ul>
		Advanced Math	<ul style="list-style-type: none"> <li>Identify the <math>y</math>-intercept when given the graph of a nonlinear function</li> <li>Rewrite an expression by combining like terms through addition</li> </ul>
		Problem-Solving and Data Analysis	<ul style="list-style-type: none"> <li>Solve simple problems using percents or unit rates</li> <li>Find the median of a list of values presented in ascending order</li> </ul>
		Geometry and Trigonometry / Geometry	<ul style="list-style-type: none"> <li>Find the volume of a right rectangular prism when given the lengths of the edges and the formula for the volume</li> <li>Find the area of a rectangle when given the lengths of the sides</li> </ul>

Performance Score Band	Section Score Scale Range	Content Domain	Skill/Knowledge Statements
2	370–410	Algebra	<ul style="list-style-type: none"> <li>Solve problems using a graph or linear equation when given one or more pieces of the following information: slope, intercepts, input-output pairs</li> <li>Identify the coordinates of a solution, point, or intercept when given a graph of a linear equation or a graph of a system of two linear equations</li> </ul>
		Advanced Math	<ul style="list-style-type: none"> <li>Identify a key feature of a graph, such as an intercept, a solution, or (SAT, PSAT/NMSQT, and PSAT 10 only) a translation, when given the graph of either a nonlinear function or a system consisting of a linear and a nonlinear function</li> <li>Rewrite an expression by combining like terms, factoring out a greatest common factor, or applying the distributive property</li> </ul>
		Problem-Solving and Data Analysis	<ul style="list-style-type: none"> <li>Solve problems using percentages, unit rates, and unit conversions</li> <li>Read, compare, and interpret data presented in a bar graph or frequency table</li> </ul>
		Geometry and Trigonometry / Geometry	<ul style="list-style-type: none"> <li>Solve problems involving the perimeter and side lengths of plane figures</li> <li>(SAT, PSAT/NMSQT, and PSAT 10 only) Solve problems by applying theorems related to parallel lines cut by a transversal</li> </ul>
3	420–460	Algebra	<ul style="list-style-type: none"> <li>With or without a simple context, create a linear equation or inequality in one or two variables that represents the possible value(s) of the variable</li> <li>Within a context, use linear equations to find input-output pairs and to interpret input-output pairs or rate of change in terms of a context</li> </ul>
		Advanced Math	<ul style="list-style-type: none"> <li>Solve quadratic equations in factored form; (SAT, PSAT/NMSQT and PSAT 10 only) solve equations containing absolute value expressions or simple radical expressions</li> <li>Rewrite equations by finding the sum of two polynomials or solving for a variable of interest</li> </ul>
		Problem-Solving and Data Analysis	<ul style="list-style-type: none"> <li>Solve problems involving percent, including finding percentages and solving problems in which the percentage is greater than 100</li> <li>Read and interpret data displayed in a two-way table; calculate the probability of an event from a frequency table or a two-way table</li> </ul>
		Geometry and Trigonometry / Geometry	<ul style="list-style-type: none"> <li>Solve problems involving the area and side lengths of plane figures</li> <li>Find the measure of an angle by applying definitions and theorems about angles, such as the triangle angle sum theorem and (SAT, PSAT/NMSQT, and PSAT 10 only) theorems related to angles formed by intersecting lines</li> <li>Use the Pythagorean theorem to find the length of a hypotenuse in a right triangle when given the lengths of the two legs</li> </ul>

Performance Score Band	Section Score Scale Range	Content Domain	Skill/Knowledge Statements
4	470–540	Algebra	<ul style="list-style-type: none"> <li>• Within a complex context, choose the best interpretation of a part of an equation or of an input-output pair when given a linear equation that models the situation</li> <li>• Solve problems about linear relationships, making use of structure when present, that include equations, intercepts, slope, and input-output pairs, including finding equations for parallel and perpendicular lines</li> </ul>
		Advanced Math	<ul style="list-style-type: none"> <li>• With or without a context, use a quadratic or exponential equation that represents the relationship between two variables, or (SAT, PSAT/NMSQT, and PSAT 10 only) create and use a quadratic or exponential equation that represents the relationship between two variables</li> <li>• Solve quadratic equations using factoring; solve equations that include radical or rational terms, or solve a system of one linear and one nonlinear equation; (PSAT/NMSQT and PSAT 10 only) solve polynomial equations using factoring</li> </ul>
		Problem-Solving and Data Analysis	<ul style="list-style-type: none"> <li>• Identify, interpret, and use ratios, proportions, percentages, and rates, expressing them in equivalent forms, to solve problems</li> <li>• With or without a context, compare and contrast data sets using mean, median, and (SAT, PSAT/NMSQT, and PSAT 10 only) standard deviation</li> <li>• Fit a linear model to data displayed in a scatterplot</li> <li>• (SAT only) Select plausible values of the population mean or population proportion when given a sample mean or sample proportion, respectively, and the associated margin of error</li> </ul>
		Geometry and Trigonometry / Geometry	<ul style="list-style-type: none"> <li>• Solve problems involving the area of a plane figure or the volume of a cube or pyramid</li> <li>• Solve problems using concepts and theorems related to scale factors, the sum of angles of triangles, and (SAT, PSAT/NMSQT, and PSAT 10 only) congruence and similarity</li> <li>• Find a side length in a given triangle by applying the Pythagorean theorem; (PSAT/NMSQT and PSAT 10 only) find an angle measure in or a side length of a given triangle using the properties of special right triangles</li> </ul>



THE MATH SECTION

Performance Score Band	Section Score Scale Range	Content Domain	Skill/Knowledge Statements
5	550–600	Algebra	<ul style="list-style-type: none"> <li>• With or without a context, create a linear equation or inequality in two variables when given two input-output pairs, a table of values, or details about a translation of a given function</li> <li>• With or without a complex context, create one or both of the two linear equations in two variables that model the situation, or find and use the solution to a given system of linear equations</li> </ul>
		Advanced Math	<ul style="list-style-type: none"> <li>• Use an equation either of a quadratic or exponential function or of a system of a linear and a quadratic function, and identify key features of the graph; (SAT, PSAT/NMSQT, and PSAT 10 only) create and use an equation either of a quadratic or exponential function or of a system of a linear and a quadratic function, and identify key features of the graph</li> <li>• Rewrite a polynomial expression by finding the product of a monomial and a binomial, by finding the product of two binomials, or by factoring</li> </ul>
		Problem-Solving and Data Analysis	<ul style="list-style-type: none"> <li>• With or without a context, solve problems using growth factor expressed as a percent or complex unit</li> <li>• Apply the understanding that the probability of all possible outcomes of an event has a sum of 1</li> </ul>
		Geometry and Trigonometry / Geometry	<ul style="list-style-type: none"> <li>• (SAT only) Solve problems using the relationship between sine and cosine of complementary angles; (SAT only) convert between degree measure and radian measure</li> <li>• (SAT only) Write an equation of a circle in the <math>xy</math>-plane when given the center of the circle and a point that lies on the circle</li> <li>• Solve multistep problems involving area and perimeter of plane figures</li> </ul>

Performance Score Band	Section Score Scale Range	Content Domain	Skill/Knowledge Statements
6	610–670	Algebra	<ul style="list-style-type: none"> <li>• Find and interpret the meaning of intercepts or slope for complex linear equations</li> <li>• Find the number of solutions to a complex linear equation; (SAT, PSAT/NMSQT, and PSAT 10 only) find the number of solutions to a system of two linear equations, or find missing coefficients of a linear equation or a system of two linear equations when the number of solutions is given</li> <li>• Make connections between a table, an algebraic representation, a graph, a solution, or features of a graph of a complex linear equation or a system of two linear equations</li> </ul>
		Advanced Math	<ul style="list-style-type: none"> <li>• (SAT, PSAT/NMSQT, and PSAT 10 only) Within a context, create a quadratic or exponential equation that represents the situation, and solve for an unknown value</li> <li>• (SAT, PSAT/NMSQT, and PSAT 10 only) Within a context, interpret a key feature of the graph of an exponential or quadratic equation representing the situation</li> <li>• Make connections between either the graph of a quadratic or exponential function or points on the graph of a function and its algebraic representation, and (SAT, PSAT/NMSQT, and PSAT 10 only) understand how a translation of a function affects the graph or the equation</li> </ul>
		Problem-Solving and Data Analysis	<ul style="list-style-type: none"> <li>• Solve multistep problems using ratios, rates, percentages, and derived units, including problems that arise from products and quotients</li> <li>• Determine the average rate of change for data displayed in a graph; determine the mean and median of a data set presented in a frequency table</li> <li>• Calculate the conditional probability of an event from a two-way table</li> </ul>
		Geometry and Trigonometry / Geometry	<ul style="list-style-type: none"> <li>• Calculate the surface area, the volume, or a dimension of a prism when given other information about the prism</li> <li>• Solve complex problems by applying the Pythagorean theorem to find a side length of a rectangle or by applying the triangle angle sum theorem</li> <li>• (SAT, PSAT/NMSQT, and PSAT 10 only) Solve complex problems by using concepts and theorems related to congruence and similarity of right triangles, including, but not limited to, trigonometric ratios of right triangles, or by identifying the impact of changes by a scale factor on perimeter, area, and volume</li> </ul>

Performance Score Band	Section Score Scale Range	Content Domain	Skill/Knowledge Statements
7	680–800	Algebra	<ul style="list-style-type: none"> <li>• With or without a context, create and/or solve a linear equation or system of linear equations, or identify the correct coefficients or constants in the equation(s) that represent(s) the situation</li> <li>• Make connections between different representations of linear equations in one variable, linear functions, linear equations in two variables, systems of two linear equations in two variables, and (SAT, PSAT/NMSQT, and PSAT 10 only) linear inequalities when these representations include symbolic representations that may contain variable constants</li> </ul>
		Advanced Math	<ul style="list-style-type: none"> <li>• Solve problems with or without context involving one or more nonlinear equations to find the value of an unknown constant</li> <li>• Solve a complex equation or formula for a variable of interest; (SAT only) use properties of exponents and properties of polynomial, rational, and radical expressions to rewrite complex expressions, using structure when present, or determine the most suitable form of an equation to display a certain feature</li> </ul>
		Problem-Solving and Data Analysis	<ul style="list-style-type: none"> <li>• (SAT only) Identify or describe the population to which the results of a research study can be extended</li> <li>• Determine how the mean, median, and range of a data set are affected by changes in the data set</li> </ul>
		Geometry and Trigonometry / Geometry	<ul style="list-style-type: none"> <li>• Solve for missing values in objects modeled by various 2D and 3D geometric shapes by applying formulas for area, surface area, or volume</li> <li>• (SAT, PSAT/NMSQT, and PSAT 10 only) Solve complex problems by applying properties of similar and congruent triangles, theorems related to angles and triangles, or right triangle trigonometry, or (SAT only) use similarity to calculate values of trigonometric ratios</li> <li>• (SAT only) Solve problems using properties and theorems related to circles and parts of circles, such as radii, diameters, tangents, angles, arcs, arc length, and sectors</li> </ul>

**Table 11. Math Section: Skills Insight—Algebra Content Domain.**

Performance Score Band	Algebra Content Domain: Skill/Knowledge Statements
1	<ul style="list-style-type: none"> <li>• Within a context, create and/or solve a simple equation in one variable</li> <li>• Solve a simple one-step linear equation in one variable</li> </ul>
2	<ul style="list-style-type: none"> <li>• Solve problems using a graph or linear equation when given one or more pieces of the following information: slope, intercepts, input-output pairs</li> <li>• Identify the coordinates of a solution, point, or intercept when given a graph of a linear equation or a graph of a system of two linear equations</li> </ul>
3	<ul style="list-style-type: none"> <li>• With or without a simple context, create a linear equation or inequality in one or two variables that represents the possible value(s) of the variable</li> <li>• Within a context, use linear equations to find input-output pairs and to interpret input-output pairs or rate of change in terms of a context</li> </ul>
4	<ul style="list-style-type: none"> <li>• Within a complex context, choose the best interpretation of a part of an equation or of an input-output pair when given a linear equation that models the situation</li> <li>• Solve problems about linear relationships, making use of structure when present, that include equations, intercepts, slope, and input-output pairs, including finding equations for parallel and perpendicular lines</li> </ul>
5	<ul style="list-style-type: none"> <li>• With or without a context, create a linear equation or inequality in two variables when given two input-output pairs, a table of values, or details about a translation of a given function</li> <li>• With or without a complex context, create one or both of the two linear equations in two variables that model the situation, or find and use the solution to a given system of linear equations</li> </ul>
6	<ul style="list-style-type: none"> <li>• Find and interpret the meaning of intercepts or slope for complex linear equations</li> <li>• Find the number of solutions to a complex linear equation; (SAT, PSAT/NMSQT, and PSAT 10 only) find the number of solutions to a system of two linear equations, or find missing coefficients of a linear equation or a system of two linear equations when the number of solutions is given</li> <li>• Make connections between a table, an algebraic representation, a graph, a solution, or features of a graph of a complex linear equation or a system of two linear equations</li> </ul>
7	<ul style="list-style-type: none"> <li>• With or without a context, create and/or solve a linear equation or system of linear equations, or identify the correct coefficients or constants in the equation(s) that represent(s) the situation</li> <li>• Make connections between different representations of linear equations in one variable, linear functions, linear equations in two variables, systems of two linear equations in two variables, and (SAT, PSAT/NMSQT, and PSAT 10 only) linear inequalities when these representations include symbolic representations that may contain variable constants</li> </ul>

**Table 12. Math Section: Skills Insight—Advanced Math Content Domain.**

Performance Score Band	Advanced Math Content Domain: Skill/Knowledge Statements
1	<ul style="list-style-type: none"> <li>• Identify the <math>y</math>-intercept when given the graph of a nonlinear function</li> <li>• Rewrite an expression by combining like terms through addition</li> </ul>
2	<ul style="list-style-type: none"> <li>• Identify a key feature of a graph, such as an intercept, a solution, or (SAT, PSAT/NMSQT, and PSAT 10 only) a translation, when given the graph of either a nonlinear function or a system consisting of a linear and a nonlinear function</li> <li>• Rewrite an expression by combining like terms, factoring out a greatest common factor, or applying the distributive property</li> </ul>
3	<ul style="list-style-type: none"> <li>• Solve quadratic equations in factored form; (SAT, PSAT/NMSQT and PSAT 10 only) solve equations containing absolute value expressions or simple radical expressions</li> <li>• Rewrite equations by finding the sum of two polynomials or solving for a variable of interest</li> </ul>
4	<ul style="list-style-type: none"> <li>• With or without a context, use a quadratic or exponential equation that represents the relationship between two variables, or (SAT, PSAT/NMSQT, and PSAT 10 only) create and use a quadratic or exponential equation that represents the relationship between two variables</li> <li>• Solve quadratic equations using factoring; solve equations that include radical or rational terms, or solve a system of one linear and one nonlinear equation; (PSAT/NMSQT and PSAT 10 only) solve polynomial equations using factoring</li> </ul>
5	<ul style="list-style-type: none"> <li>• Use an equation either of a quadratic or exponential function or of a system of a linear and a quadratic function, and identify key features of the graph; (SAT, PSAT/NMSQT, and PSAT 10 only) create and use an equation either of a quadratic or exponential function or of a system of a linear and a quadratic function, and identify key features of the graph</li> <li>• Rewrite a polynomial expression by finding the product of a monomial and a binomial, by finding the product of two binomials, or by factoring</li> </ul>
6	<ul style="list-style-type: none"> <li>• (SAT, PSAT/NMSQT, and PSAT 10 only) Within a context, create a quadratic or exponential equation that represents the situation, and solve for an unknown value</li> <li>• (SAT, PSAT/NMSQT, and PSAT 10 only) Within a context, interpret a key feature of the graph of an exponential or quadratic equation representing the situation</li> <li>• Make connections between either the graph of a quadratic or exponential function or points on the graph of a function and its algebraic representation, and (SAT, PSAT/NMSQT, and PSAT 10 only) understand how a translation of a function affects the graph or the equation</li> </ul>
7	<ul style="list-style-type: none"> <li>• Solve problems with or without context involving one or more nonlinear equations to find the value of an unknown constant</li> <li>• Solve a complex equation or formula for a variable of interest; (SAT only) use properties of exponents and properties of polynomial, rational, and radical expressions to rewrite complex expressions, using structure when present, or determine the most suitable form of an equation to display a certain feature</li> </ul>

**Table 13. Math Section: Skills Insight—Problem-Solving and Data Analysis Content Domain.**

<b>Performance Score Band</b>	<b>Problem-Solving and Data Analysis Content Domain: Skill/Knowledge Statements</b>
1	<ul style="list-style-type: none"> <li>Solve simple problems using percents or unit rates</li> <li>Find the median of a list of values presented in ascending order</li> </ul>
2	<ul style="list-style-type: none"> <li>Solve problems using percentages, unit rates, and unit conversions</li> <li>Read, compare, and interpret data presented in a bar graph or frequency table</li> </ul>
3	<ul style="list-style-type: none"> <li>Solve problems involving percent, including finding percentages and solving problems in which the percentage is greater than 100</li> <li>Read and interpret data displayed in a two-way table; calculate the probability of an event from a frequency table or a two-way table</li> </ul>
4	<ul style="list-style-type: none"> <li>Identify, interpret, and use ratios, proportions, percentages, and rates, expressing them in equivalent forms, to solve problems</li> <li>With or without a context, compare and contrast data sets using mean, median, and (SAT, PSAT/NMSQT, and PSAT 10 only) standard deviation</li> <li>Fit a linear model to data displayed in a scatterplot</li> <li>(SAT only) Select plausible values of the population mean or population proportion when given a sample mean or sample proportion, respectively, and the associated margin of error</li> </ul>
5	<ul style="list-style-type: none"> <li>With or without a context, solve problems using growth factor expressed as a percent or complex unit</li> <li>Apply the understanding that the probability of all possible outcomes of an event has a sum of 1</li> </ul>
6	<ul style="list-style-type: none"> <li>Solve multistep problems using ratios, rates, percentages, and derived units, including problems that arise from products and quotients</li> <li>Determine the average rate of change for data displayed in a graph; determine the mean and median of a data set presented in a frequency table</li> <li>Calculate the conditional probability of an event from a two-way table</li> </ul>
7	<ul style="list-style-type: none"> <li>(SAT only) Identify or describe the population to which the results of a research study can be extended</li> <li>Determine how the mean, median, and range of a data set are affected by changes in the data set</li> </ul>

**Table 14. Math Section: Skills Insight—Geometry and Trigonometry / Geometry Content Domain.**

<b>Performance Score Band</b>	<b>Geometry and Trigonometry / Geometry Content Domain: Skill/Knowledge Statements</b>
1	<ul style="list-style-type: none"> <li>Find the volume of a right rectangular prism when given the lengths of the edges and the formula for the volume</li> <li>Find the area of a rectangle when given the lengths of the sides</li> </ul>
2	<ul style="list-style-type: none"> <li>Solve problems involving the perimeter and side lengths of plane figures</li> <li>(SAT, PSAT/NMSQT, and PSAT 10 only) Solve problems by applying theorems related to parallel lines cut by a transversal</li> </ul>
3	<ul style="list-style-type: none"> <li>Solve problems involving the area and side lengths of plane figures</li> <li>Find the measure of an angle by applying definitions and theorems about angles, such as the triangle angle sum theorem and (SAT, PSAT/NMSQT, and PSAT 10 only) theorems related to angles formed by intersecting lines</li> <li>Use the Pythagorean theorem to find the length of a hypotenuse in a right triangle when given the lengths of the two legs</li> </ul>
4	<ul style="list-style-type: none"> <li>Solve problems involving the area of a plane figure or the volume of a cube or pyramid</li> <li>Solve problems using concepts and theorems related to scale factors, the sum of angles of triangles, and (SAT, PSAT/NMSQT, and PSAT 10 only) congruence and similarity</li> <li>Find a side length in a given triangle by applying the Pythagorean theorem; (PSAT/NMSQT and PSAT 10 only) find an angle measure in or a side length of a given triangle using the properties of special right triangles</li> </ul>
5	<ul style="list-style-type: none"> <li>(SAT only) Solve problems using the relationship between sine and cosine of complementary angles; (SAT only) convert between degree measure and radian measure</li> <li>(SAT only) Write an equation of a circle in the <math>xy</math>-plane when given the center of the circle and a point that lies on the circle</li> <li>Solve multistep problems involving area and perimeter of plane figures</li> </ul>
6	<ul style="list-style-type: none"> <li>Calculate the surface area, the volume, or a dimension of a prism when given other information about the prism</li> <li>Solve complex problems by applying the Pythagorean theorem to find a side length of a rectangle or by applying the triangle angle sum theorem</li> <li>(SAT, PSAT/NMSQT, and PSAT 10 only) Solve complex problems by using concepts and theorems related to congruence and similarity of right triangles, including, but not limited to, trigonometric ratios of right triangles, or by identifying the impact of changes by a scale factor on perimeter, area, and volume</li> </ul>
7	<ul style="list-style-type: none"> <li>Solve for missing values in objects modeled by various 2D and 3D geometric shapes by applying formulas for area, surface area, or volume</li> <li>(SAT, PSAT/NMSQT, and PSAT 10 only) Solve complex problems by applying properties of similar and congruent triangles, theorems related to angles and triangles, or right triangle trigonometry, or (SAT only) use similarity to calculate values of trigonometric ratios</li> <li>(SAT only) Solve problems using properties and theorems related to circles and parts of circles, such as radii, diameters, tangents, angles, arcs, arc length, and sectors</li> </ul>

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# Appendix: Methodology

The digital SAT Suite Skills Insight framework was developed through an empirical, data-based process involving College Board content and measurement staff. The result of this process is a vertically articulated framework describing, in words and via exemplar test questions, the kinds and sophistication level of skills and knowledge that students scoring in particular performance score bands on one of the digital SAT Suite assessments are likely able to demonstrate.

It's important to note that the Skills Insight descriptors and exemplars don't characterize the achievement of individual test takers but rather what test takers in general are able to exhibit on the tests. Although Skills Insight information is thus not diagnostic in a strict sense, it can be used alongside other information, such as students' grades and evaluations by teachers, to better understand what students know and can do in reading and writing and in math. For students scoring below the highest performance score band, Skills Insight also provides clarity about the nature and complexity of skills and knowledge students can still acquire to improve their college and career readiness and, thus, their performance on subsequent testing within the suite.

The development process for Skills Insight, which employs a scale anchoring methodology, can be summarized as follows:

1. Psychometric definition of a series of performance score bands along the suite's vertical scale
2. Psychometric assignment of pools of digital-suite test questions to these score bands
3. Content staff development of verbal descriptors of skills and knowledge typically demonstrated at each score band for each test section, derived from a careful analysis of the questions assigned to each score band by psychometric staff
4. Content staff identification of exemplar questions for each test section by score band and content domain as a way to concretize the verbal descriptors



Each of these steps in the process is discussed below.

**1. Psychometric definition of score bands**

College Board psychometrics staff began the Skills Insight development process by defining a series of six *scale anchor points* establishing seven *performance score bands* covering the entirety of the digital suite’s vertical scale. This means that Skills Insight descriptors apply from the bottom of the scale (represented by the lowest score point on PSAT 8/9) to the top (represented by the highest score point on the SAT). This is possible because each test in the digital SAT Suite measures essentially the same knowledge and skills as all the other tests, with relatively minor differences across testing programs reflecting the ages and attainments of the programs’ targeted test-taking populations.

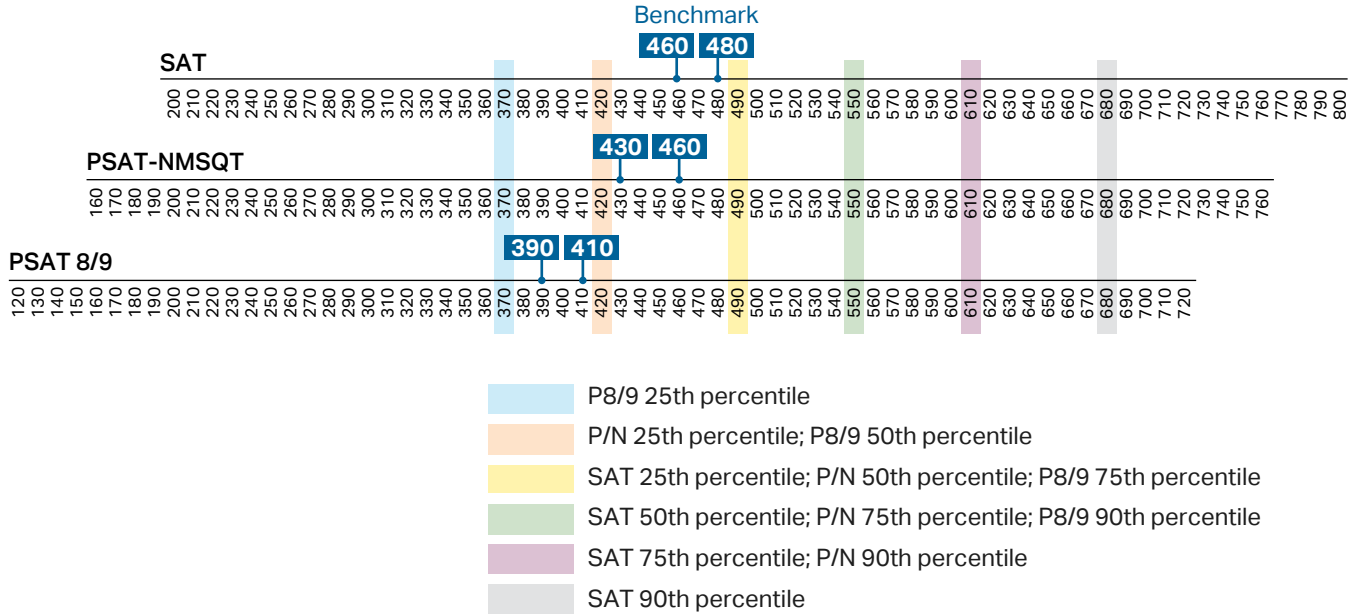
The six scale anchor points selected correspond to various widely recognized percentile scores across the digital suite’s vertical scale, resulting in seven performance score bands. In table 15, below, “Scale Anchor Percentile Location” indicates the point on the digital suite’s vertical scale at which performance score bands 2 through 7 begin. The use of select percentile scores as scale anchor points accounts for the variation in the ranges between the Reading and Writing and the Math sections in performance score bands 3 and 4.

**Table 15. Skills Insight Methodology: Scale Anchor Points and Resulting Performance Score Bands.**

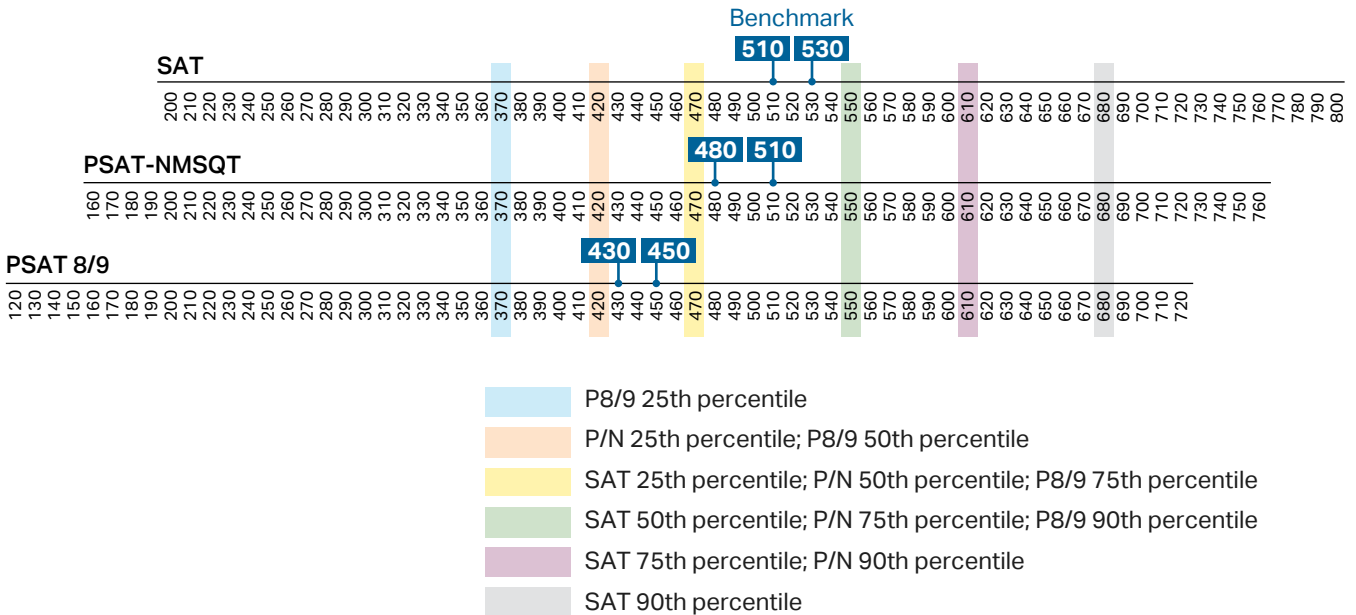
Performance Score Band	Scale Anchor Percentile Location (Lower Limit of Band)	Digital SAT Suite Test Section	
		Reading and Writing	Math
1	n/a	<370	<370
2	PSAT 8/9 25th percentile	370–410	370–410
3	PSAT/NMSQT / PSAT 10 25th percentile PSAT 8/9 50th percentile	420–480	420–460
4	SAT 25th percentile PSAT/NMSQT / PSAT 10 50th percentile PSAT 8/9 75th percentile	490–540	470–540
5	SAT 50th percentile PSAT/NMSQT / PSAT 10 75th percentile PSAT 8/9 90th percentile	550–600	550–600
6	SAT 75th percentile PSAT/NMSQT / PSAT 10 90th percentile	610–670	610–670
7	SAT 90th percentile	680–800	680–800

The information presented in the above table, along with benchmark score placements, is illustrated graphically in figure 1 (Reading and Writing) and figure 2 (Math).

**Figure 1. Skills Insight Methodology: Reading and Writing Section Performance Score Bands and Benchmark Score Locations.**



**Figure 2. Skills Insight Methodology: Math Section Performance Score Bands and Benchmark Score Locations.**



In addition to providing a logical basis for dividing the scale into performance score bands, the use of select percentile scores as lower boundaries enabled the resultant bands to be wide enough (i.e., to encompass enough score points) to facilitate the identification of genuine differences between performance levels exhibited in each band as well as narrow enough to permit College Board content staff to clearly and concisely summarize key elements of typical performance in each of the bands.

## 2. Psychometric assignment of test questions to score bands

During 2022, College Board psychometrics staff used statistical criteria to assign Reading and Writing and Math test questions from large digital-suite question pools into performance score bands. This assignment would allow content staff to examine the questions by section, band, and content domain in order to come up with reasonable generalizations regarding students' performance.

Each analyzed test question was assigned to a scale score using a technique called *RP67 mapping*. "RP" here refers to *response probability*, while "67" refers to a 0.67 probability threshold. A given test question was assigned to the lowest performance score band (if any) at which students whose section scores also fell within the band had a 0.67 or greater probability of answering the question correctly. The use of this criterion gave College Board confidence that a given question was assigned to the most appropriate performance score band, as students in that band had a high probability (at least a two-thirds' chance) of answering the question correctly, while students in lower bands had a lower probability of giving the right answer.

Exemplar test questions intended to illustrate typical performance in a band were subject to a second criterion: in addition to meeting the RP67 criterion described above, the probability that students in the next-lower band would answer the question correctly had to be less than 0.50. This second "test" is the *RP50 criterion*. Using these criteria in combination helped ensure that these exemplar questions, which were meant to be representative, fell solidly within a given band—that is, these questions were highly likely to be answered correctly by students in the assigned performance score band and relatively less likely to be answered correctly by students in the next-lower band.

## 3. Content staff development of verbal descriptors

During 2022 and 2023, College Board content experts in English language arts/literacy and math examined the sets of test questions assigned to them in step 2. From this analysis, they derived provisional skill/knowledge statements for each test section by score band and content domain. Staff then evaluated candidate statements for clarity, precision, and meaningfulness, with the twin goals of keeping the number of statements manageable for users and ensuring clear vertical articulation (i.e., that each set of statements described higher levels of performance than any and all preceding ones). Senior content experts as well as editorial reviewers then examined the statements for general quality and for consistency of phrasing across bands.

**4. Content staff identification of exemplar test questions**

Also during 2022 and 2023 and concurrently with step 3, College Board content experts nominated exemplar question candidates from the pool of questions that met both the RP67 and RP50 criteria discussed in step 2. These exemplars were intended to illustrate and lend concreteness to corresponding skill/knowledge statements in particular performance score bands, although it wasn't necessarily the case that an exemplar was provided for each skill/knowledge statement.