PLAN ENGLISH TEST

Table 3: The College Readiness Standards

The Standards describe what students who score in the specified score ranges are *likely* to know and to be able to do. The ideas for progress help teachers identify ways of enhancing students' learning based on the scores students receive. The score range at the Benchmark level of achievement is highlighted.

		Topic Development in Terms of Purpose and Focus	***Organization, Unity, and Coherence***	***Word Choice in Terms of Style, Tone, Clarity, and Economy***
1–12	**Standards**	■ Students who score in the 1–12 range are most likely beginning to develop the knowledge and skills assessed in the other score ranges.		
	ideas for progress	■ read and discuss the work of favorite writers ■ regularly write informal responses to literature (fiction and nonfiction) in their journals ■ identify sentences that convey the main ideas in a variety of texts and then practice composing such sentences	■ write short texts in a variety of genres, illustrating simple organization ■ use paragraphing as an organizational device	■ revise writing to clarify sentences containing too many phrases and clauses ■ check writing to make sure pronoun references are clear ■ revise writing to edit out empty words (e.g., *really, very, big, kind of*)
13–15	**Standards**		■ Use conjunctive adverbs or phrases to show time relationships in simple narrative essays (e.g., *then, this time*)	■ Revise sentences to correct awkward and confusing arrangements of sentence elements ■ Revise vague nouns and pronouns that create obvious logic problems
	ideas for progress	■ read writers of various genres and imitate their work ■ revise writing to ensure that every sentence is necessary to the purpose of the piece and that no important information has been left out	■ write many simply organized short texts of various genres ■ revise writing to ensure that information is in the best order	■ identify and revise obviously wordy, redundant, or cluttered material
16–19	**Standards**	■ Identify the basic purpose or role of a specified phrase or sentence ■ Delete a clause or sentence because it is obviously irrelevant to the essay	■ Select the most logical place to add a sentence in a paragraph	■ Delete obviously synonymous and wordy material in a sentence ■ Revise expressions that deviate from the style of an essay
	ideas for progress	■ continue reading writers of various genres and imitating their work ■ write longer and more complicated essays, stories, reviews, etc. ■ state the main theme of or summarize essays they have written ■ revise essays by eliminating sentences or ideas that violate the essay's focus	■ recognize and experiment with more sophisticated organizational structures (e.g., comparison-contrast, cause-effect) ■ revise writing to delete illogical conjunctive adverbs ■ discuss the most logical place to add specific information in a draft essay ■ discuss the purpose and the importance of the opening paragraph for directing the rest of the piece	■ revise writing to make it more concise and precise ■ discuss and model tone and style

Sentence Structure and Formation	*Conventions of Usage*	*Conventions of Punctuation*
■ vary sentence length by combining simple sentences ■ check writing to make sure verb tenses are consistent	■ make sure to use adjectives like *well, less,* and *worst* correctly	■ learn to recognize when commas are overused
■ Use conjunctions or punctuation to join simple clauses ■ Revise shifts in verb tense between simple clauses in a sentence or between simple adjoining sentences	■ Solve such basic grammatical problems as how to form the past and past participle of irregular but commonly used verbs and how to form comparative and superlative adjectives	■ Delete commas that create basic sense problems (e.g., between verb and direct object)
■ revise writing to correct glaring shifts in verb tense or voice	■ revise writing to correct basic grammar and punctuation errors ■ practice and understand correct usage of common homonyms (e.g., *their/there, past/passed*)	■ practice using punctuation correctly in simple sentences (e.g., "He ran, jumped, and swam.") ■ check for and correct unnecessary commas
■ Determine the need for punctuation and conjunctions to avoid awkward-sounding sentence fragments and fused sentences ■ Decide the appropriate verb tense and voice by considering the meaning of the entire sentence	■ Solve such grammatical problems as whether to use an adverb or an adjective form, how to ensure straightforward subject-verb and pronoun-antecedent agreement, and which preposition to use in simple contexts ■ Recognize and use the appropriate word in frequently confused pairs such as *there* and *their*, *past* and *passed*, and *led* and *lead*	■ Provide appropriate punctuation in straightforward situations (e.g., items in a series) ■ Delete commas that disturb the sentence flow (e.g., between modifier and modified element)
■ experiment with writing more sophisticated sentences; check to ensure verbs agree with subjects and modifiers don't dangle	■ revise sentences to ensure that each verb agrees with its subject when there is some text between the two	■ use commas to set off parenthetical phrases

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Table 3 (continued): The College Readiness Standards

The Standards describe what students who score in the specified score ranges are *likely* to know and to be able to do. The ideas for progress help teachers identify ways of enhancing students' learning based on the scores students receive. The score range at the Benchmark level of achievement is highlighted.

		Topic Development in Terms of Purpose and Focus	***Organization, Unity, and Coherence***	***Word Choice in Terms of Style, Tone, Clarity, and Economy***
20–23	**Standards**	■ Identify the central idea or main topic of a straightforward piece of writing ■ Determine relevancy when presented with a variety of sentence-level details	■ Use conjunctive adverbs or phrases to express straightforward logical relationships (e.g., *first, afterward, in response*) ■ Decide the most logical place to add a sentence in an essay ■ Add a sentence that introduces a simple paragraph	■ Delete redundant material when information is repeated in different parts of speech (e.g., "alarmingly startled") ■ Use the word or phrase most consistent with the style and tone of a fairly straightforward essay ■ Determine the clearest and most logical conjunction to link clauses
	ideas for progress	■ continue reading the work of writers of various genres; begin experimenting with a variety of writing styles ■ revise fairly straightforward writing to sharpen focus and coherence of entire piece	■ experiment with using words and phrases that create clear transitions in writing ■ rearrange sentences in a paragraph in order to improve its coherence ■ write introductions that capture the reader's interest, write conclusions that provide a sense of closure, and describe the rhetorical effects that each creates	■ continue to edit sentences for empty language, wordiness, and redundancy ■ revise structurally complex sentences to correct vague or ambiguous pronoun references
24–27	**Standards**	■ Identify the focus of a simple essay, applying that knowledge to add a sentence that sharpens that focus or to determine if an essay has met a specified goal ■ Delete material primarily because it disturbs the flow and development of the paragraph ■ Add a sentence to accomplish a fairly straightforward purpose such as illustrating a given statement	■ Determine the need for conjunctive adverbs or phrases to create subtle logical connections between sentences (e.g., *therefore, however, in addition*) ■ Rearrange the sentences in a fairly uncomplicated paragraph for the sake of logic ■ Add a sentence to introduce or conclude the essay or to provide a transition between paragraphs when the essay is fairly straightforward	■ Revise a phrase that is redundant in terms of the meaning and logic of the entire sentence ■ Identify and correct ambiguous pronoun references ■ Use the word or phrase most appropriate in terms of the content of the sentence and tone of the essay
	ideas for progress	■ develop awareness of ways that form and content can be changed as the audience for the writing changes ■ learn how meaning can be expressed through connotation	■ experiment with more subtle organizational structures ■ revise writing by refining introductions, conclusions, and transitions in complex paragraphs	■ select and manipulate words, phrases, and clauses to convey shades of meaning and tone ■ avoid clutter and use vivid verbs and specific nouns

Sentence Structure and Formation	*Conventions of Usage*	*Conventions of Punctuation*
■ Recognize and correct marked disturbances of sentence flow and structure (e.g., participial phrase fragments, missing or incorrect relative pronouns, dangling or misplaced modifiers)	■ Use idiomatically appropriate prepositions, especially in combination with verbs (e.g., *long for, appeal to*) ■ Ensure that a verb agrees with its subject when there is some text between the two	■ Use commas to set off simple parenthetical phrases ■ Delete unnecessary commas when an incorrect reading of the sentence suggests a pause that should be punctuated (e.g., between verb and direct object clause)
■ revise writing to correct faulty coordination and subordination of clauses ■ revise sentences to correct inconsistencies in verb tense and pronoun person	■ check to be sure pronouns agree with antecedents in increasingly complex sentences	■ use punctuation to set off nonessential information in a sentence ■ recognize inappropriate uses of commas
■ Revise to avoid faulty placement of phrases and faulty coordination and subordination of clauses in sentences with subtle structural problems ■ Maintain consistent verb tense and pronoun person on the basis of the preceding clause or sentence	■ Ensure that a pronoun agrees with its antecedent when the two occur in separate clauses or sentences ■ Identify the correct past and past participle forms of irregular and infrequently used verbs and form present-perfect verbs by using *have* rather than *of*	■ Use punctuation to set off complex parenthetical phrases ■ Recognize and delete unnecessary commas based on a careful reading of a complicated sentence (e.g., between the elements of a compound subject or a compound verb joined by *and*) ■ Use apostrophes to indicate simple possessive nouns ■ Recognize inappropriate uses of colons and semicolons
■ use sentence-combining techniques to create more sophisticated sentences; check to avoid fragments, comma splices, and run-ons	■ recognize the difference between *its* and *it's, your* and *you're, who* and *whom*	■ use commas to set off nonessential appositives or clauses ■ use semicolons to indicate relationships between independent clauses

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Table 3 (continued): **The College Readiness Standards**

The Standards describe what students who score in the specified score ranges are *likely* to know and to be able to do. The ideas for progress help teachers identify ways of enhancing students' learning based on the scores students receive. The score range at the Benchmark level of achievement is highlighted.

		Topic Development in Terms of Purpose and Focus	***Organization, Unity, and Coherence***	***Word Choice in Terms of Style, Tone, Clarity, and Economy***
28–32	**Standards**	■ Apply an awareness of the focus and purpose of a fairly involved essay to determine the rhetorical effect and suitability of an existing phrase or sentence, or to determine the need to delete plausible but irrelevant material ■ Add a sentence to accomplish a subtle rhetorical purpose such as to emphasize, to add supporting detail, or to express meaning through connotation	■ Make sophisticated distinctions concerning the logical use of conjunctive adverbs or phrases, particularly when signaling a shift between paragraphs ■ Rearrange sentences to improve the logic and coherence of a complex paragraph ■ Add a sentence to introduce or conclude a fairly complex paragraph	■ Correct redundant material that involves sophisticated vocabulary and sounds acceptable as conversational English (e.g., "an aesthetic viewpoint" versus "the outlook of an aesthetic viewpoint") ■ Correct vague and wordy or clumsy and confusing writing containing sophisticated language
	ideas for progress	■ write essays that indicate a heightened awareness of the audience for those essays ■ recognize the role that specific sentences play in terms of the essay as a whole	■ revise or add introductory sentences or transitions based on an understanding of the logic and rhetorical purpose of the paragraph and the essay as a whole	■ revise writing to delete redundancies in terms of the paragraph as a whole

Sentence Structure and Formation	*Conventions of Usage*	*Conventions of Punctuation*
■ Use sentence-combining techniques, effectively avoiding problematic comma splices, run-on sentences, and sentence fragments, especially in sentences containing compound subjects or verbs ■ Maintain a consistent and logical use of verb tense and pronoun person on the basis of information in the paragraph or essay as a whole	■ Correctly use reflexive pronouns, the possessive pronouns *its* and *your,* and the relative pronouns *who* and *whom* ■ Ensure that a verb agrees with its subject in unusual situations (e.g., when the subject-verb order is inverted or when the subject is an indefinite pronoun)	■ Use commas to set off a nonessential/nonrestrictive appositive or clause ■ Deal with multiple punctuation problems (e.g., compound sentences containing unnecessary commas and phrases that may or may not be parenthetical) ■ Use an apostrophe to show possession, especially with irregular plural nouns ■ Use a semicolon to indicate a relationship between closely related independent clauses
■ maintain parallel structure between phrases and clauses in a complex sentence ■ employ a variety of sentence structures in their writing	■ revise sentences to ensure agreement between verb and subject when a phrase between the two suggests a different number for the verb	■ use the colon to introduce an example or an elaboration

PLAN Reading Test

Table 6: **The College Readiness Standards**

The Standards describe what students who score in the specified score ranges are *likely* to know and to be able to do. The ideas for progress help teachers identify ways of enhancing students' learning based on the scores students receive. The score range at the Benchmark level of achievement is highlighted.

		Main Ideas and Author's Approach	*Supporting Details*
1–12	**Standards**	■ Students who score in the 1–12 range are most likely beginning to develop the knowledge and skills assessed in the other score ranges.	
	ideas for progress	■ locate details in a literary text that suggest the author's or narrator's intent ■ speculate about an author's or narrator's beliefs, motives, or thinking	■ write, exchange, and answer a series of questions that examine significant details presented in a text ■ locate and discuss details presented in a text (e.g., who, what, where)
13–15	**Standards**	■ Recognize a clear intent of an author or narrator in uncomplicated literary narratives	■ Locate basic facts (e.g., names, dates, events) clearly stated in a passage
	ideas for progress	■ work with peers to create logical statements about the main idea or purpose of simple paragraphs	■ determine which details in a text are essential to understanding the author's or narrator's intended message ■ scan a text in order to locate specific details (e.g., dates, specialized terms, facts) ■ identify the author's or narrator's reasons for including specific information in the text

Descriptions of the PLAN Reading Passages

Uncomplicated Literary Narratives refers to excerpts from essays, short stories, and novels that tend to use simple language and structure, have a clear purpose and a familiar style, present straightforward interactions between characters, and employ only a limited number of literary devices such as metaphor, simile, or hyperbole.

More Challenging Literary Narratives refers to excerpts from essays, short stories, and novels that tend to make moderate use of figurative language, have a more intricate structure and messages conveyed with some subtlety, and may feature somewhat complex interactions between characters.

Complex Literary Narratives refers to excerpts from essays, short stories, and novels that tend to make generous use of ambiguous language and literary devices, feature complex and subtle interactions between characters, often contain challenging context-dependent vocabulary, and typically contain messages and/or meanings that are not explicit but are embedded in the passage.

Sequential, Comparative, and Cause-Effect Relationships	*Meanings of Words*	*Generalizations and Conclusions*
■ use various strategies (e.g., timelines, event chains, discussion) to determine whether an event occurred and, if so, when it occurred ■ discuss an issue of interest, determining how past events affected the present ■ locate evidence in a text that explicitly states why an event or a series of events occurred ■ search for patterns or clues (e.g., signal words) that indicate cause-effect relationships	■ use various resources (e.g., dictionary, thesaurus) to explore connotations of familiar words or descriptive language	■ recognize generalizations about the main character in a literary text ■ combine several pieces of information to make a reasonable generalization about a specific character ■ make predictions about characters and events presented in a literary text, verifying or rejecting those predictions and making new ones as they read
■ Determine when (e.g., first, last, before, after) or if an event occurred in uncomplicated passages ■ Recognize clear cause-effect relationships described within a single sentence in a passage	■ Understand the implication of a familiar word or phrase and of simple descriptive language	■ Draw simple generalizations and conclusions about the main characters in uncomplicated literary narratives
■ analyze how an author or narrator uses description, dialogue, and action to suggest relationships between characters in written or nonprint sources (e.g., films, ads) ■ select phrases or statements from a literary text that illustrate how a specific character feels toward others in the text ■ read portions of a literary text, predicting how a person's actions or words would likely impact a specific situation ■ use various strategies (e.g., questioning, role-playing) to determine plausible cause-effect relationships	■ examine specific language in a text and propose plausible interpretations based in part on their own viewpoints and experiences	■ analyze the reasonableness of generalizations by reviewing information presented in the text and from other sources ■ compose generalizations that include qualifying language (e.g., *a few, sometimes*) when limited evidence is presented by the author or narrator ■ determine what a literary narrative is generally about, organizing the text's information into general statements that are supported by details from the text ■ draw reasonable conclusions about people and situations using evidence presented in a text

Uncomplicated Informational Passages refers to materials that tend to contain a limited amount of data, address basic concepts using familiar language and conventional organizational patterns, have a clear purpose, and are written to be accessible.

More Challenging Informational Passages refers to materials that tend to present concepts that are not always stated explicitly and that are accompanied or illustrated by more—and more detailed—supporting data, include some difficult context-dependent words, and are written in a somewhat more demanding and less accessible style.

Complex Informational Passages refers to materials that tend to include a sizable amount of data, present difficult concepts that are embedded (not explicit) in the text, use demanding words and phrases whose meaning must be determined from context, and are likely to include intricate explanations of processes or events.

PLAN Reading Test

Table 6 (continued): The College Readiness Standards

The Standards describe what students who score in the specified score ranges are *likely* to know and to be able to do. The ideas for progress help teachers identify ways of enhancing students' learning based on the scores students receive. The score range at the Benchmark level of achievement is highlighted.

		Main Ideas and Author's Approach	*Supporting Details*
16–19	**Standards**	■ Identify a clear main idea or purpose of straightforward paragraphs in uncomplicated literary narratives	■ Locate simple details at the sentence and paragraph level in uncomplicated passages ■ Recognize a clear function of a part of an uncomplicated passage
	ideas for progress	■ analyze techniques used by the author of a text to reveal or conceal his or her point of view	■ explain in their own words the significance of specific information in written or nonprint sources ■ distinguish between what is most and least important in a text
20–23	**Standards**	■ Infer the main idea or purpose of straightforward paragraphs in uncomplicated literary narratives ■ Understand the overall approach taken by an author or narrator (e.g., point of view, kinds of evidence used) in uncomplicated passages	■ Locate important details in uncomplicated passages ■ Make simple inferences about how details are used in passages
	ideas for progress	■ determine how an inference might change based on the inclusion of additional information ■ synthesize information from challenging texts to clarify understanding of important concepts and ideas ■ distinguish between key concepts and subordinate ideas in a text and write a concise summary ■ search for clues that suggest the viewpoint from which a literary text is written or told and determine whether the author's or narrator's point of view is valid or biased ■ analyze the relationship between an author's or narrator's intended message and the rhetorical devices used to convey that message (e.g., language used, evidence provided)	■ gather and interpret details presented in a text, determining the contribution of each to the author's or narrator's intended message ■ identify details that clearly support the key point(s) of written or nonprint sources ■ check inferences against information provided in a text, identifying what is and is not sufficiently supported by the text

Sequential, Comparative, and Cause-Effect Relationships	*Meanings of Words*	*Generalizations and Conclusions*
■ Identify relationships between main characters in uncomplicated literary narratives ■ Recognize clear cause-effect relationships within a single paragraph in uncomplicated literary narratives	■ Use context to understand basic figurative language	■ Draw simple generalizations and conclusions about people, ideas, and so on in uncomplicated passages
■ place events from a literary text in chronological order by locating substantial evidence from the text ■ identify similarities and differences between people, objects, events, or ideas, drawing accurate conclusions ■ identify interrelationships between and among people, objects, events, or ideas in written or nonprint sources ■ determine factors that have clearly influenced the outcome of a situation ■ identify statements in texts that clearly state the cause(s) and effect(s) of specific events	■ clarify the meanings of words or descriptive phrases by searching for clues in the text (e.g., sentence structure, context, prefixes/suffixes, spelling patterns)	■ make accurate generalizations about people and events based on evidence presented in the text ■ identify inaccurate generalizations (e.g., stereotypes) in written or nonprint sources ■ identify details in a challenging text that confirm or disprove conclusions drawn by the author or narrator and by the students themselves or their peers ■ make reasoned judgments about ideas and events based on evidence from written or nonprint sources
■ Order simple sequences of events in uncomplicated literary narratives ■ Identify clear relationships between people, ideas, and so on in uncomplicated passages ■ Identify clear cause-effect relationships in uncomplicated passages	■ Use context to determine the appropriate meaning of some figurative and nonfigurative words, phrases, and statements in uncomplicated passages	■ Draw generalizations and conclusions about people, ideas, and so on in uncomplicated passages ■ Draw simple generalizations and conclusions using details that support the main points of more challenging passages
■ analyze the sequence of events in written or nonprint sources ■ map sequences of events in texts or films or from everyday occurrences, defending their reasoning ■ evaluate the extent to which comparisons made by the author or narrator help clarify specific textual relationships ■ search for clues embedded in a text that suggest cause-effect relationships ■ examine events in written or nonprint sources to determine the precipitating cause(s) and final outcome(s)	■ investigate the meanings of words and their possible effect(s) on the perceptions and behavior of people ■ research words and phrases from different sources, identifying their shades of meaning in various contexts or situations	■ defend or challenge the author's or narrator's assertions by locating several key pieces of information in a challenging text ■ make accurate generalizations based on implicit information in the text ■ analyze specific parts of a text, drawing accurate conclusions

PLAN Reading Test

Table 6 (continued): **The College Readiness Standards**

The Standards describe what students who score in the specified score ranges are *likely* to know and to be able to do. The ideas for progress help teachers identify ways of enhancing students' learning based on the scores students receive. The score range at the Benchmark level of achievement is highlighted.

		Main Ideas and Author's Approach	*Supporting Details*
24–27	**Standards**	■ Identify a clear main idea or purpose of any paragraph or paragraphs in uncomplicated passages ■ Infer the main idea or purpose of straightforward paragraphs in more challenging passages ■ Summarize basic events and ideas in more challenging passages ■ Understand the overall approach taken by an author or narrator (e.g., point of view, kinds of evidence used) in more challenging passages	■ Locate important details in more challenging passages ■ Locate and interpret minor or subtly stated details in uncomplicated passages ■ Discern which details, though they may appear in different sections throughout a passage, support important points in more challenging passages
	ideas for progress	■ develop a reasonable interpretation of the central theme(s) or main point(s) of a challenging text ■ divide challenging texts into sections, determining what the key points are for each section ■ determine the primary purpose of specific sections of a text or the text as a whole ■ use two different mediums (e.g., sculpture, poetry, photography, music) to present a synopsis of the main idea(s) of a text, thereby expanding understanding of the text's meaning ■ identify subtle evidence that conveys the author's or narrator's point of view in challenging texts ■ change the wording of a text in order to convey a different tone or attitude (e.g., from persuasive to serious)	■ enumerate aspects or characteristics of people, objects, events, or ideas ■ interpret and integrate details in a text in order to verify or contradict a specific point or claim made by the author or narrator ■ recognize and study the evolution of an author's argument(s) as presented in a complex informational text
28–32	**Standards**	■ Infer the main idea or purpose of more challenging passages or their paragraphs ■ Summarize events and ideas in virtually any passage ■ Understand the overall approach taken by an author or narrator (e.g., point of view, kinds of evidence used) in virtually any passage	■ Locate and interpret minor or subtly stated details in more challenging passages ■ Use details from different sections of some complex informational passages to support a specific point or argument
	ideas for progress	■ identify and analyze ideas in a complex text and write a reasoned synopsis of the text ■ determine the author's or narrator's position toward a specific topic, issue, or idea by noting key facts, claims, and details from the text	■ identify facts embedded in complex informational texts

Sequential, Comparative, and Cause-Effect Relationships	*Meanings of Words*	*Generalizations and Conclusions*
■ Order sequences of events in uncomplicated passages ■ Understand relationships between people, ideas, and so on in uncomplicated passages ■ Identify clear relationships between characters, ideas, and so on in more challenging literary narratives ■ Understand implied or subtly stated cause-effect relationships in uncomplicated passages ■ Identify clear cause-effect relationships in more challenging passages	■ Use context to determine the appropriate meaning of virtually any word, phrase, or statement in uncomplicated passages ■ Use context to determine the appropriate meaning of some figurative and nonfigurative words, phrases, and statements in more challenging passages	■ Draw subtle generalizations and conclusions about characters, ideas, and so on in uncomplicated literary narratives ■ Draw generalizations and conclusions about people, ideas, and so on in more challenging passages
■ read texts containing challenging sequences (e.g., flashback, flash-forward), discussing how the order of events affects understanding of the text ■ explain how altering a series of events would likely change the outcome of a situation or the actions of the characters ■ develop an in-depth understanding of the fine distinctions between literary characters in a challenging text by closely examining the language used by the author or narrator ■ identify relationships between ideas and/or people in a challenging text and how those relationships develop over the course of the text ■ identify clues in a challenging text that suggest possible motives for and effects of a person's actions or words ■ read conflicting viewpoints of an event and use textual evidence to identify which one has the most reasonable explanations of causes and effects	■ develop and use strategies for deciphering the meanings of words or phrases embedded in richly figurative or technical contexts ■ analyze figurative and technical language in the media, relating some instances to a personal experience	■ synthesize information in challenging texts, making valid generalizations or conclusions about people and situations ■ confirm or disprove generalizations suggested in texts by providing examples or counterexamples from other sources
■ Order sequences of events in more challenging passages ■ Understand the dynamics between people, ideas, and so on in more challenging passages ■ Understand implied or subtly stated cause-effect relationships in more challenging passages	■ Determine the appropriate meaning of words, phrases, or statements from figurative or somewhat technical contexts	■ Use information from one or more sections of a more challenging passage to draw generalizations and conclusions about people, ideas, and so on
■ determine the chronological sequence of events and the spatial relationships in complex texts (e.g., Dickens, García Marquez, Morrison, Tolstoy) ■ analyze subtle relationships between and among people, objects, events, and ideas in complex texts or films, forming accurate inferences ■ identify implications and possible consequences of actions in complex texts	■ employ strategies for defining a difficult concept, such as identifying its characteristics or providing examples of what it is and is not like	■ examine information from multiple sources and perspectives (including the author's or narrator's) in order to make reasonable generalizations about people, objects, ideas, and situations ■ evaluate the impact of literary devices (e.g., figurative language) on the meaning of a literary narrative

PSAT/NMSQT® SKILLS INSIGHT™

Critical Reading

Score Band	20–29	30–39	40–49
Determining the Meaning of Words			
Use vocabulary skills, context, roots, prefixes and suffixes to determine the meaning of words.			
Academic Skills A typical student in this score band can do the following:	• Use understanding of the words and phrases in a sentence when selecting missing vocabulary at the sentence level • Use clues, such as a definition provided in the sentence, when selecting missing vocabulary at the sentence level • Select missing vocabulary in sentences that contain word clues such as *not … but*, and *although* that establish relationships within a sentence	• Use understanding of the words and phrases in a sentence when selecting missing vocabulary at the sentence level • Use clues, such as a definition provided in the sentence, when selecting missing vocabulary at the sentence level • Select missing vocabulary in sentences that contain word clues such as *because*, *so … that*, and *unlike* that establish relationships within the sentence • Use the structure of a sentence to understand the sentence's meaning and to select missing vocabulary • Use knowledge of **root words**, **prefixes** and **suffixes** when selecting missing vocabulary at the sentence level • Use clues within a short section of text to clarify the meaning of words or to select the appropriate meaning of a familiar word that has more than one meaning	• Use **context clues**, such as an embedded definition (a definition provided in the sentence), when selecting missing vocabulary at the sentence level • Select missing vocabulary in sentences with logical constructions that include terms such as *while* or *despite* • Use the structure of a complex sentence to understand the sentence's meaning and to select missing vocabulary • Use knowledge of **root words**, **prefixes** and **suffixes** when selecting missing vocabulary at the sentence level • Use the context of a sentence or short section of text to clarify the meaning of words or to select the appropriate meaning of a word that has more than one meaning
Suggestions for Improvement To advance to the next score band, students should focus on the following:	• When you come across a word you don't know in your reading, look at the word to see if it contains a **root word** you know or a **prefix** or **suffix** that gives you a clue about what the word might mean. See if the words in the rest of the sentence can help you figure out the word's meaning. Is a definition given in the sentence? Are there other clues that tell you what the word might mean? • In your reading, look for sentences with words that signal relationships, such as comparison or cause-and-effect relationships. Think about how the different parts of those sentences fit together. • Pick a sentence in a text and break it into parts. Think about how the sentence's structure—the way the individual words and phrases are put together—affects the meaning of the sentence.	• When you come across a word you don't know in your reading, look at the word to see if it contains a **root word** you know or a **prefix** or **suffix** that gives you a clue about what the word might mean. See if other words in the sentence can help you figure out the word's meaning. Is there an embedded definition (a definition provided in the text)? Are there other clues that tell you what the word might mean? • In your reading, look for sentences with words that signal relationships, such as contrast or cause-and-effect relationships. Think about how the different parts of those sentences fit together. • Pick a sentence in a text and break it into parts. Think about how the sentence's structure—the way the individual words and phrases are put together—affects the meaning of the sentence. • When you come across a word with more than one meaning (such as *run* or *break*) in a text, look at the rest of the sentence and the surrounding sentences for clues to what the word means in that situation.	• In your reading, when you encounter a difficult word or phrase or a word you don't know, see if the rest of the sentence or paragraph can help you figure out what the word or phrase means. Is there an embedded definition (a definition provided in the text) or other **context clues** that might help you? • In your reading, when you encounter a difficult word or a word you don't know, look at the word to see if it contains a **root word**, **prefix** or **suffix** that you know. Look it up in a dictionary that provides information on the word's origins and history. • When you come across a word with more than one meaning (such as *run* or *break*) in a text, look at the rest of the sentence and the surrounding sentences for clues to what the word means in that situation.

Score Band	50–59	60–69	70–80
Determining the Meaning of Words **Use vocabulary skills, context, roots, prefixes and suffixes to determine the meaning of words.**			
Academic Skills A typical student in this score band can do the following:	• Use **context clues**, such as an embedded definition (a definition provided in the sentence), when selecting missing vocabulary at the sentence level • Recognize and understand less common words • Use the context of a sentence or short section of text to clarify the meaning of words or phrases • Use the context of a sentence or short section of text to select the appropriate meaning of a word that has more than one meaning	• Use **context clues**, such as an embedded definition, when selecting missing vocabulary at the sentence level • Use **context clues** when selecting missing vocabulary in a complicated or complex sentence that contains difficult vocabulary • Make sense of complex sentences with logical constructions that include terms and phrases such as *despite*, *neither … nor*, or *in contrast* to • Use knowledge of **root words**, **prefixes** and **suffixes** when determining the meaning of words • Demonstrate increased understanding of difficult or specialized words • Use the context of a sentence or short section of text to select the appropriate meaning of a word that has more than one meaning	• Use **context clues**, such as an embedded definition, when selecting missing vocabulary in a sentence that contains difficult vocabulary • Use **context clues** when selecting missing vocabulary in a complicated or complex sentence that contains difficult vocabulary • Use **context clues** when making sense of complex sentences with logical constructions that include terms and phrases such as *although*, *since* or *all but* • Use knowledge of **root words**, **prefixes** and **suffixes** when determining the meaning of words • Demonstrate comprehension of difficult or specialized vocabulary • Use the context of a sentence or short section of text to select the appropriate meaning of a word that has more than one meaning
Suggestions for Improvement To advance to the next score band, students should focus on the following:	• In your reading, when you encounter a difficult or unknown word, see if the rest of the sentence or paragraph can help you figure out what the word or phrase means. Is there an embedded definition (a definition provided in the text) or other **context clues** that might help you? Does the word contain a **root**, **prefix** or **suffix** that you know? • When you come across a word with more than one meaning (such as *run* or *break*) in a text, look at the rest of the sentence or paragraph for clues to what the word means in that context. • In your reading, look for and identify complex sentences. Pick a complicated or complex sentence and break it into its parts. Does the sentence include a comparison, a contrast or a cause-and-effect relationship? Think about how the different parts of a sentence work together. • When reading a difficult text about a topic with which you are not familiar, look up any words you don't know in a dictionary that provides information on the word's origins and history. Try to find out if the word is part of a specialized vocabulary—that is, if the word is primarily used within a certain field. • To improve your vocabulary, read a difficult text and look up the words you don't know in a dictionary.	• In your reading, when you encounter a difficult or unknown word, see if the rest of the sentence or paragraph can help you figure out what the word or phrase means. Is there an embedded definition (a definition provided in the text) or other **context clues** that might help you? Does the word contain a **root**, **prefix** or **suffix** that you know? • When you come across a word with more than one meaning (such as *run* or *break*) in a text, look at the rest of the sentence or paragraph for clues to what the word means in that context. • In your reading, look for and identify complex sentences. Pick a complicated, complex sentence and break it into its parts. Does the sentence include a comparison, a contrast or a cause-and-effect relationship? Think about how the different parts of a sentence work together. • When reading a difficult text about a topic with which you are not familiar, look up any words you don't know in a dictionary that provides information on the word's origins and history. Try to find out if the word is part of a specialized vocabulary—that is, if the word is primarily used within a certain field. • To improve your vocabulary, read outside of your comfort zone. For example, if you prefer fiction, read more nonfiction. Or, try to find a difficult text about a topic with which you are not familiar. Whenever you come across words you don't know, look them up in a dictionary.	• This is the top score band and students who score at this level will have likely mastered the skills listed at all other levels. However, students can always benefit from more practice. We encourage students to review the skills and examples listed in the 50–59 and 60–69 score bands.

Score Band	20–29	30–39	40–49
Author's Craft			
Understand how authors use tone, style, and writing devices such as metaphor or symbolism.			
Academic Skills A typical student in this score band can do the following:	• This particular skill group is not represented in this score band. However, it is an important academic skill tested on the PSAT/NMSQT®. We encourage students to review the skills and examples in the next highest score band, where this particular skill group does appear.	• Recognize an author's overall purpose in a short text • Recognize the effect of a writing strategy an author uses in a text	• Recognize the use of **figurative language** • Recognize **rhetorical devices** (such as personal **anecdote**, emotional appeal, and use of evidence) in short texts • Recognize the function of words or rhetorical devices in a short section of text • Identify an author's purpose in a short text or limited section of a longer text • Recognize an author's purpose for using a particular writing strategy in a text • Use details in a text to determine tone (the author's attitude toward the subject of the text and toward the audience)
Suggestions for Improvement To advance to the next score band, students should focus on the following:	• As you read a text, think about the author's main purpose for writing that text. For example, does the author want to explain something to the reader, to persuade the reader or to make an argument? • As you read a text, look for writing strategies the author uses. Think about how the author uses language to achieve specific effects—for example, to give an opinion or to make the reader feel a certain way.	• As you read a text, think about the author's purpose for writing that text. For example, does the author want to inform or persuade the reader? Also think about the author's purpose in short sections of the text. For example, is the author's goal in one paragraph to explain something, or to make an argument? • In your reading, look for and identify examples of **rhetorical devices** (writing techniques meant to evoke a response in the audience, such as personal anecdote or use of evidence). Look for and identify examples of **figurative language** (such as **metaphor**). • In your reading, think about writing strategies used by authors. What effect does an author's use of devices have on a text? How does the author's word choice create different effects? Why does the author choose to use certain strategies? • As you read a text, pay attention to the author's tone. Think about details in the text that give you clues about how the author feels about the topic. For example, does the author seem to be angry, humorous or eager?	• As you read a text, think about the author's main purpose for writing that text. For example, is the author providing facts about a topic, describing a situation or persuading the reader? • In your reading, look for **rhetorical devices** (writing techniques meant to evoke a response in the audience, such as use of repetition) and strategies used by authors. Identify examples of devices like **paradox** and repetition. Think about the effect such devices and strategies have on a text. Why might an author choose to use certain devices and strategies? • In your reading, think about how authors use language to create specific effects. How does word choice help an author achieve his or her purpose? • As you read a text, pay attention to the author's tone. Consider details in the text that give you clues about how the author feels about the topic. For example, does the author seem to be matter-of-fact, sympathetic or amused?

Score Band	50–59	60–69	70–80
Author's Craft **Understand how authors use tone, style, and writing devices such as metaphor or symbolism.**			
Academic Skills A typical student in this score band can do the following:	• Recognize an author's overall purpose in short and long texts • Understand how an author's word choice achieves specific effects • Use details in a text to determine tone (the author's attitude toward the subject of the text and toward the audience) • Recognize sophisticated **rhetorical devices** such as **paradox** and use of repetition • Determine the function of words and **rhetorical devices** in a limited section of text • Recognize how an author uses rhetorical strategies to achieve specific effects	• Determine an author's overall purpose, whether or not it is stated in the text • Determine the function of **rhetorical devices** (such as the use of examples) in a limited section of a long text • Recognize how an author uses rhetorical devices to make an argument in a limited section of text • Determine tone (the author's attitude toward the subject of the text and toward the audience) in a limited section of a long text	• Understand how an author uses **figurative language** to achieve specific effects • Understand an author's purpose in a limited section of a long text
Suggestions for Improvement To advance to the next score band, students should focus on the following:	• As you read a text, consider the author's overall purpose for writing that text. For example, is the author's purpose to entertain, to express a concern or to teach about a topic? Does the author explicitly state his or her purpose? Can you determine the author's purpose even if it is unstated? • In your reading, look for and identify examples of **rhetorical devices** (writing techniques meant to evoke a response in the audience, such as **parallel structure** or the use of evidence). Determine the function or purpose of a rhetorical device in a text. Why might an author choose to use a certain device? Consider the effects rhetorical devices have in a text. • As you read a text, pay attention to the author's tone. Consider details in the text that give you clues about how the author feels about the topic. Does the author seem to be objective, concerned or amused? Does the author's tone stay the same, or does it change in different parts of the text?	• In your reading, look for and identify examples of **figurative language** (language that has a meaning beyond the literal meaning) such as **metaphor**, **personification** or **symbolism**. Consider the specific effects figurative language can have on a text. Think about why an author chooses to use figurative language. • As you read a text, consider the author's main purpose for writing that text. Then break the text into smaller parts (a few sentences, a paragraph or several paragraphs) and think about the author's purpose in each part. For example, does the author use a small section of text to raise an argument or to persuade the reader?	• This is the top score band and students who score at this level will have likely mastered the skills listed at all other levels. However, students can always benefit from more practice. We encourage students to review the skills and examples listed in the 50–59 and 60–69 score bands.

Score Band	20–29	30–39	40–49
Reasoning and Inferencing **Understand assumptions, suggestions and implications in reading passages and draw informed conclusions.**			
Academic Skills A typical student in this score band can do the following:	• This particular skill group is not represented in this score band. However, it is an important academic skill tested on the PSAT/NMSQT. We encourage students to review the skills and examples in the next highest score band, where this particular skill group does appear.	• Recognize a general idea that is supported by details in the text • Recognize an idea that is implied within one text or across two short texts • Determine what an author assumes based on information given in the text	• Use simple reasoning to connect a concept in a text to a parallel concept within or outside the text • Use multiple steps of reasoning to reach a conclusion about a text or texts, for example, to determine the relationship between texts • Make an inference based on information in a text and apply it to a different but related situation • Make an inference from multiple details within a text or a short section of text
Suggestions for Improvement To advance to the next score band, students should focus on the following:	• After you read a text, ask yourself what ideas you can come up with based on what you have read. Start by thinking about what you learned from the text. What did the text make you think about? What do the details in the text tell you about the topic being discussed? • As you read a text, ask yourself what the text implies—what the author *suggests* but does not *state*. Can you guess that the author believes something or feels a certain way about a topic, even if it is not directly stated?	• As you read a text, think about how you might be able to connect an idea in the text to a different but related situation. Can you connect the idea in the text to something else you have read, or to another topic with which you are familiar? • Look for two texts by different authors on the same topic or on related topics. Ask yourself how the texts go together. What conclusions can you draw about the topic after reading both texts? Would the author of one text agree or disagree with the author of the other text? • As you read a text, ask yourself what the text implies—what the author *suggests* but does not *state*. Think about how those implications might relate to a different situation. For example, if you've guessed the author's opinion about a topic, can you guess how he or she would feel about a similar topic?	• As you read a text, think about how you can connect ideas and examples within that text. Are there connections that the author does not discuss but that you can make on your own? Think about how you might be able to connect an idea in the text to a different but related situation. Can you connect an idea to something else you have read, or to another situation with which you are familiar? • Look for two texts by different authors on the same topic or on related topics. As you read them, think about how you can connect the ideas in the texts. What conclusions can you draw after reading both texts? What is the relationship between the texts? Do the authors agree or disagree? Do the authors approach the topic in similar or different ways? • As you read a text, ask yourself what the text implies—what the author *suggests* but does not *state*. For example, can you guess the author's opinion about a topic or an idea even if he or she does not state an opinion?

Critical Reading, continued

Score Band	50–59	60–69	70–80
Reasoning and Inferencing **Understand assumptions, suggestions and implications in reading passages and draw informed conclusions.**			
Academic Skills A typical student in this score band can do the following:	• Use simple reasoning to make a connection between an example and an idea within a text • Use simple steps of reasoning to connect a concept in a text to an analogous concept • Use multiple steps of reasoning to make connections between ideas within and across texts • Use multiple steps of reasoning to reach a conclusion about a text or texts, for example, to determine the relationship between texts • Make an inference based on multiple details or implications within a text or a section of text • Infer an author's opinion about the central ideas in a text	• Use simple reasoning to connect ideas within and across texts • Use multiple steps of reasoning to connect ideas and concepts within and across long texts • Use multiple steps of reasoning to connect a concept in a text to a concept beyond the text • Use multiple steps of reasoning to reach a conclusion about a text or texts, for example, to determine how the author of one text would respond to another text • Make an inference based on multiple details within a short or long text • Make an inference based on an implication in a text	• Use reasoning to compare and contrast details or ideas across texts • Perform multiple steps of reasoning to reach a conclusion about a text or texts, for example, to determine how the author of one text would respond to another text
Suggestions for Improvement To advance to the next score band, students should focus on the following:	• As you read a text, think about how you can connect ideas or concepts within that text. Can you make connections on your own that the author does not discuss? Think about how you might be able to apply a concept from the text to another situation. Can you connect the concept to a different topic, to something else you have read or to another situation with which you are familiar? • Look for two texts by different authors on the same topic or on related topics. As you read them, think about how you can connect ideas and concepts in both texts. What conclusions can you draw after reading both texts? What is the relationship between the two texts? Can you guess how the author of one text would respond to the author of the other text? • As you read a text, ask yourself what the text implies—what the author *suggests* but does not *state*. For example, can you determine that the author has certain assumptions about the topic that he or she does not explicitly state? Can you infer something about the author or the topic based on what the author implies in the text?	• As you read two texts by different authors on the same topic or on related topics, analyze each author's ideas and the details each author includes. Compare and contrast the way each author treats ideas and details. In what ways are the authors' approaches to a topic similar, and in what ways are their approaches different? • After you read one text or two texts by different authors on the same topic or on related topics, think about the conclusions you can draw from the text or texts. Can you predict what would come next in a text if the author were to keep writing? Can you describe the relationship between two related texts? Can you imagine how the author of one text would respond to the author of the other text?	• This is the top score band and students who score at this level will have likely mastered the skills listed at all other levels. However, students can always benefit from more practice. We encourage students to review the skills and examples listed in the 50–59 and 60–69 score bands.

Score Band	20–29	30–39	40–49
Organization and Ideas **Understand the organization of a reading passage, and identify the main and supporting ideas.**			
Academic Skills A typical student in this score band can do the following:	• This particular skill group is not represented in this score band. However, it is an important academic skill tested on the PSAT/NMSQT. We encourage students to review the skills and examples in the next highest score band, where this particular skill group does appear.	• Recognize how details support an idea within a text	• Understand the relationship of ideas within and across texts • Compare and contrast central ideas across short texts • Integrate information within and across sentences and texts • Recognize the use of specific examples to illustrate an idea • Recognize an idea, such as a paraphrase, that is supported by the text • Recognize the function of a selected section of text within a longer text
Suggestions for Improvement To advance to the next score band, students should focus on the following:	• As you read a text, think about how details in the text support an idea. Look for information in the text that strengthens or further develops an idea.	• Look for two texts by different authors on the same topic or related topics. How do the ideas in each text relate to one another? Do the authors express similar ideas, or different ideas? Does an idea in one text help you understand an idea in another text? • As you read a text, pay attention to the author's ideas and think about how those ideas work together. What is the main idea, and what are the supporting ideas? How does the author use examples to illustrate an idea or make a point? • As you read a text, pick a sentence and restate it in your own words. Then pick a short paragraph and try to restate it in your own words. • As you read a text, think about how the different parts of the text work together. How does the author introduce, support and conclude his or her idea?	• As you read a text, identify the main idea of the whole text. Then think about the main idea in short sections of the text—for example, the main idea in one paragraph or in just a few sentences. • As you read a text, pay attention to the author's ideas and consider how those ideas work together. What is the main idea, and what are the supporting ideas? How does the author use examples to illustrate an idea? • As you read two texts by different authors on the same topic or on related topics, think about how the ideas in each text relate to one another. Does an idea in one text help you understand an idea in the other text? Do several ideas in one text support an idea in the other text? • As you read an argumentative text (such as an essay or an editorial in your local newspaper), think about the parts of the author's argument. How does the author introduce, support and conclude his or her argument? Does the author acknowledge opposing points of view?

Score Band	50–59	60–69	70–80
Organization and Ideas **Understand the organization of a reading passage, and identify the main and supporting ideas.**			
Academic Skills A typical student in this score band can do the following:	• Determine the main idea of a short text or a section of text • Understand and connect ideas within and across longer texts • Understand how an example supports an idea in a text • Integrate ideas within and across sentences and texts • Recognize and understand components of an author's argument in a text	• Analyze and connect ideas within and across texts • Understand how a specific example illustrates an idea within a text • Integrate ideas within and across sentences and texts	• Understand that a specific concept illustrates a larger idea in a text • Analyze and integrate ideas in a limited section of a longer text
Suggestions for Improvement To advance to the next score band, students should focus on the following:	• As you read a text, analyze the author's ideas. Think about how the ideas throughout the text work together. How are the author's ideas connected? • As you read two texts by different authors on the same topic or on related topics, think about how the ideas in each text relate to one another. Can you make connections between the two texts? • As you read a text, think about how examples can illustrate an idea. Does the author use specific examples to support a general idea or theory?	• As you read a text, consider how examples are used to illustrate an idea. Does the author use specific examples to support or elaborate on a general idea, position or theory? • As you read a text, analyze the author's ideas and concepts. Consider how the ideas throughout the text work together. How are different concepts connected? Why does the author introduce or include certain ideas?	• This is the top score band and students who score at this level will have likely mastered the skills listed at all other levels. However, students can always benefit from more practice. We encourage students to review the skills and examples listed in the 50–59 and 60–69 score bands.

Score Band	20–29	30–39	40–49
Understanding Literary Elements **Understand literary elements such as plot, setting and characterization.**			
Academic Skills A typical student in this score band can do the following:	• This particular skill group is not represented in this score band. However, it is an important academic skill tested on the PSAT/NMSQT. We encourage students to review the skills and examples in the next highest score band, where this particular skill group does appear.	• Identify attitudes of characters	• Identify attitudes of characters • Determine characterization from interactions among characters and **narrative perspective**
Suggestions for Improvement To advance to the next score band, students should focus on the following:	• As you read a short story, novel or play, pick a character and think about what you can tell about that character. What does the character say? How does he or she act? How does he or she seem to feel about a situation or about another character?	• As you read a short story, novel or play, pick a character and think about what you can tell about that character. What does the character think or say? How does he or she act? How does he or she seem to feel about a situation or about another character? • As you read a short story, novel or play, think about how the author creates characters. What do you learn from the narrator? What can you tell about different characters based on their interactions with one another?	• As you read a short story, novel or play, think about what you can tell about different characters. Can you tell why a character thinks, speaks or acts a certain way? Can you tell how different characters feel about one another or about a situation? • As you read a short story, novel, or play, think about the different parts of the plot. Can you identify the conflict (such as character vs. character, character vs. self or character vs. nature)? Can you identify the climax (the turning point or the peak of the story)?

Score Band	50–59	60–69	70–80
Understanding Literary Elements **Understand literary elements such as plot, setting and characterization.**			
Academic Skills A typical student in this score band can do the following:	• Identify attitudes of characters • Understand elements of plot such as conflict or climax	• Identify attitudes and nuances of characters • Determine characterization from details within the text	• Determine characterization from details within the text
Suggestions for Improvement To advance to the next score band, students should focus on the following:	• As you read a short story, novel or play, think about the details in the text that convey information about the characters. What does the author tell you about a character? • As you read a short story, novel or play, consider what you can tell about different characters. Can you tell why a character thinks, speaks or acts a certain way? Can you tell how different characters feel about each other or about a situation? Can you describe a character's attitude?	• As you read a short story, novel or play, think about the details in the text that convey information about the characters. What does the author tell you about a character? • As you read a short story, novel or play, think about what you can tell about different characters. Can you tell why a character thinks, speaks or acts a certain way? Can you tell how different characters feel about each other or about a situation? Can you explain a character's attitude in the text as a whole, or in one scene?	• This is the top score band and students who score at this level will have likely mastered the skills listed at all other levels. However, students can always benefit from more practice. We encourage students to review the skills and examples listed in the 50–59 and 60–69 score bands.

Writing

Manage Word Choice and Grammatical Relationships Between Words

Understand relationships between and among words including subject-verb agreement, pronoun reference, and verb form and tense.

Score Band	20–29	30–39	40–49
Academic Skills A typical student in this score band can do the following:	• This particular skill group is not represented in this score band. However, it is an important academic skill tested on the PSAT/NMSQT. We encourage students to review the skills and examples in the next highest score band, where this particular skill group does appear.	• Recognize inappropriate pronoun usage (the pronoun *he* should be used instead) • Recognize inappropriate verb forms • Recognize that elements related to time influence verb forms in a sentence • Recognize subject-verb disagreement when the verb precedes the subject	• Recognize inappropriate pronoun use (no pronoun is needed) • Recognize vague pronoun usage (the pronoun has no clear or specific referent) • Recognize that relative pronouns such as "when" are used to refer to a time, not to a place or person • Recognize an inappropriate shift in verb tense • Recognize inappropriate verb forms • Recognize that elements related to time influence verb forms in a sentence • Recognize subject-verb disagreement • Recognize subject-verb disagreement when the verb precedes the subject • Recognize subject-verb disagreement when the subject does not immediately precede the verb
Suggestions for Improvement To advance to the next score band, students should focus on the following:	• When reading, choose a paragraph and examine the logical relationships between the pronouns and the nouns that they refer to. When writing, make sure that any pronouns refer specifically and logically to nouns. • When reading, pay attention to how elements related to time (dates, times, etc.) dictate the appropriate verb forms. When writing, be sure to use consistent verb tense. • When reading, choose a paragraph and identify the subjects and verbs within that paragraph in order to see that writers pay attention to gender, number and person. When writing, pay attention to subject-verb agreement, even when the verb comes before the subject.	• When reading, focus on specific paragraphs that contain pronouns in order to see how writers use pronouns appropriately. When writing, check to see that any pronouns refer appropriately and logically to a noun earlier in the sentence or in a prior sentence. • When reading, pay attention to how sentence elements related to time (dates, times and even other verbs in the sentence) dictate the appropriate verb forms. When writing, be sure to use consistent verb tense. • When reading, choose a paragraph and identify the subjects and verbs within that paragraph in order to see that writers pay attention to gender, number and person. When writing, pay attention to subject-verb agreement, even when the verb comes before the subject, or when a word, phrase or clause comes between the subject and the verb.	• When reading, choose a paragraph and examine the logical relationships between the pronouns and the nouns that they refer to. When writing, make sure that pronouns agree in number with the nouns that they refer to. • When reading, choose a paragraph and identify the subjects and verbs within that paragraph in order to see that writers pay attention to gender, number and person. When writing, pay attention to subject-verb agreement, even when the subject does not immediately precede the verb.

Score Band	50–59	60–69	70–80
Manage Word Choice and Grammatical Relationships Between Words **Understand relationships between and among words including subject-verb agreement, pronoun reference, and verb form and tense.**			
Academic Skills A typical student in this score band can do the following:	• Recognize improper pronoun reference (plural pronoun is used to refer to a singular noun) • Recognize vague pronoun usage (the pronoun has no clear or specific referent) • Recognize improper pronoun reference (singular pronouns are used to refer to plural nouns) • Recognize subject-verb disagreement when the subject does not immediately precede the verb	• Recognize vague pronoun usage (the pronoun has no clear or specific referent) • Recognize inappropriate pronoun reference (singular pronouns are used to refer to a plural noun) • Recognize inappropriate shifts in person (e.g., from third person to second) • Recognize improper pronoun reference (plural pronoun is used to refer to a singular noun) • Recognize that a compound subject requires a plural verb • Recognize subject-verb disagreement in **correlative constructions** (e.g., *either . . . or*)	• Recognize vague pronoun usage (the pronoun has no clear or specific referent) • Recognize inappropriate verb forms • Recognize subject-verb disagreement when the verb precedes the subject
Suggestions for Improvement To advance to the next score band, students should focus on the following:	• When reading, choose a paragraph and examine the logical relationships between the pronouns and the nouns that they refer to. When writing, make sure that pronouns agree in number with the nouns that they refer to. • When reading, choose a paragraph and identify the subjects and verbs within that paragraph in order to see that writers pay attention to gender, number and person no matter where the subject and verb appear in the sentence and no matter whether the subject is simple or compound. When writing, make sure that subjects always agree with their associated verbs.	• When reading, choose a paragraph and examine the logical relationships between the pronouns and the nouns that they refer to. When writing, make sure that any pronouns refer specifically and logically to nouns. • When reading, pay attention to how the tense of one verb can dictate the tense of another. When writing, be sure to use appropriate verb tense. • When reading, choose a paragraph and identify the subjects and verbs within that paragraph in order to see that writers pay attention to gender, number and person. When writing, pay attention to subject-verb agreement, even when the verb comes before the subject.	• This is the top score band and students who score at this level will have likely mastered the skills listed at all other levels. However, students can always benefit from more practice. We encourage students to review the skills and examples listed in the 50–59 and 60–69 score bands.

Score Band	20–29	30–39	40–49
Manage Grammatical Structures Used to Modify or Compare **Understand correct use of adjectives and adverbs, comparative structures (such as *neither* and *nor*) and phrases used to modify or compare.**			
Academic Skills A typical student in this score band can do the following:	• This particular skill group is not represented in this score band. However, it is an important academic skill tested on the PSAT/NMSQT. We encourage students to review the skills and examples in the next highest score band, where this particular skill group does appear.	• Recognize the need for a subject that can be logically modified by an introductory phrase or clause • Recognize properly formed **correlative constructions** (e.g., *not only … but also*)	• Recognize the function of adjectives and adverbs • Recognize the need for a subject that can be logically modified by an introductory phrase or clause
Suggestions for Improvement To advance to the next score band, students should focus on the following:	• When reading, pay attention to how writers use introductory phrases and clauses to logically modify the subject of a sentence. When writing, check to see that introductory phrases and clauses logically modify the subject of a sentence. • When reading, pay attention to how writers use correlative constructions (e.g., *not only … but also, both … and, either … or*) to express relationships between things and ideas. When writing, be sure to use properly formed **correlative constructions**.	• When reading, choose a paragraph and identify adjectives and adverbs in the sentences and the words they modify. When writing, check to see that adjectives are used to modify nouns and that adverbs are used to modify verbs. • When reading, pay attention to how writers use introductory phrases and clauses to logically modify the subject of a sentence. When writing, check to see that introductory phrases and clauses logically modify the subject of a sentence.	• When reading, choose a paragraph and identify adjectives and adverbs in the sentences and the words they modify. When writing, check to see that adjectives are used to modify nouns and that adverbs are used to modify verbs. • When reading, pay attention to how writers use introductory phrases and clauses to logically modify the subject of a sentence. When writing, check to see that introductory phrases and clauses logically modify the subject of a sentence. • When reading, pay attention to the placement of modifying words, phrases and clauses. When writing, check to see that modifiers are used appropriately and logically. • When reading, focus on sentences that contain comparative phrases (e.g., *as tall as* or *so … that*). When writing, check to see that appropriate structures are used to compare things and ideas. • When reading, pay attention to how writers logically compare people, things and ideas. When writing, be sure to compare similar things in a logical way. • When reading, pay attention to how writers use correlative constructions (e.g., *not only … but also, both … and* and *either … or*) to express relationships between things and ideas. When writing, be sure to use properly formed **correlative constructions**.

Score Band	50–59	60–69	70–80
Manage Grammatical Structures Used to Modify or Compare **Understand correct use of adjectives and adverbs, comparative structures (such as *neither* and *nor*) and phrases used to modify or compare.**			
Academic Skills A typical student in this score band can do the following:	• Recognize the function of adjectives and adverbs • Recognize the need for a subject that can be logically modified by an introductory phrase or clause • Recognize misplaced modifying words or phrases • Recognize improperly formed comparative structures • Recognize illogical comparisons • Recognize improperly formed **correlative constructions** (e.g., *not only ... but also*)	• Recognize the function of adjectives and adverbs • Recognize improperly formed comparative structures (e.g., *as likely as*) • Recognize illogical comparisons	• Recognize illogical comparisons
Suggestions for Improvement To advance to the next score band, students should focus on the following:	• When reading, choose a paragraph and identify adjectives and adverbs in the sentences and the words they modify. When writing, check to see that adjectives are used to modify nouns and that adverbs are used to modify verbs. • When reading, focus on sentences that contain comparative phrases (e.g., *as tall as*). When writing, check to see that appropriate structures are used to compare things and ideas.	• When reading, pay attention to how writers logically compare people, things and ideas. When writing, be sure to compare similar things in a logical way.	• This is the top score band and students who score at this level will have likely mastered the skills listed at all other levels. However, students can always benefit from more practice. We encourage students to review the skills and examples listed in the 50–59 and 60–69 score bands.

Score Band	20–29	30–39	40–49
Manage Phrases and Clauses in a Sentence			
Use well-formed sentence structures (e.g., parallelism, connectives, and relative clauses) to indicate relationships between and among sentence elements.			
Academic Skills A typical student in this score band can do the following:	• Recognize a comma splice	• Recognize simple **parallel structures** • Recognize the need for parallel verb phrases • Recognize sentence fragments	• Recognize the need for parallel **gerund** phrases • Recognize more sophisticated **parallel structures** • Recognize that a **gerund** can serve as the subject of a sentence • Recognize improper subordination • Recognize sentence fragments • Recognize a comma splice
Suggestions for Improvement To advance to the next score band, students should focus on the following:	• When reading, notice how writers use **parallel structures** to express ideas. When writing, use properly formed parallel structures. • When reading, choose a paragraph and examine how writers use subjects and main verbs to construct complete sentences. When writing, make sure that your sentences include both a subject and a main verb.	• When reading, notice how writers use various **parallel structures** to express ideas. When writing, use properly formed parallel structures. • When reading, look for sentences whose subjects are **gerunds** (verb forms ending in *–ing* that function as nouns). When writing, recognize that gerunds can serve as the subject of a sentence. • When reading, choose a paragraph and examine how writers use **subordination** and **coordination** to construct complete sentences that clearly express the relationships among ideas within a sentence. When writing, use sentence variety, employing both subordination and coordination to construct sentences. • When reading, choose a paragraph and examine how writers use subjects and main verbs to construct complete sentences. When writing, make sure that your sentences include both a subject and a main verb. • When reading, notice how writers use punctuation to join related independent clauses. When writing, use appropriate punctuation to join related **independent clauses**.	• When reading, notice how writers use various **parallel structures** to express ideas. When writing, use properly formed parallel structures. • When reading, choose a paragraph and examine how writers use subjects and main verbs to construct complete sentences. When writing, make sure that your sentences include both a subject and a main verb. • When reading, notice how writers use appropriate punctuation to join related **independent clauses**. When writing, use appropriate punctuation to join related independent clauses.

Score Band	50–59	60–69	70–80
Manage Phrases and Clauses in a Sentence			
Use well-formed sentence structures (e.g., parallelism, connectives, and relative clauses) to indicate relationships between and among sentence elements.			
Academic Skills A typical student in this score band can do the following:	• Recognize simple **parallel structures** • Recognize more sophisticated **parallel structures** • Recognize sentence fragments • Recognize a comma splice	• Recognize sophisticated **parallel structures** • Recognize sentence fragments	• This particular skill group is not represented in this score band. However, it is an important academic skill tested on the PSAT/NMSQT. We encourage students to review the skills and examples in the next highest score band, where this particular skill group does appear.
Suggestions for Improvement To advance to the next score band, students should focus on the following:	• When reading, notice how writers use various **parallel structures** to express ideas. When writing, use properly formed parallel structures. • When reading, choose a paragraph and examine how writers use subjects and main verbs to construct complete sentences. When writing, make sure that your sentences include both a subject and a main verb.	• Students who score at this level will have likely mastered the skills listed at all previous levels. However, students can always benefit from more practice. We encourage students to review the skills and examples listed in the 40–49 and 50–59 score bands.	• This is the top score band and students who score at this level will have likely mastered the skills listed at all other levels. However, students can always benefit from more practice. We encourage students to review the skills and examples listed in the 50–59 and 60–69 score bands.

Score Band	20–29	30–39	40–49
Recognize Correctly Formed Sentences **Recognize correct sentence structure.**			
Academic Skills A typical student in this score band can do the following:	• This particular skill group is not represented in this score band. However, it is an important academic skill tested on the PSAT/NMSQT. We encourage students to review the skills and examples in the next highest score band, where this particular skill group does appear.	• Recognize correctly formed sentences	• Recognize correctly formed sentences
Suggestions for Improvement To advance to the next score band, students should focus on the following:	• When reading, pay attention to the parts of speech and how they agree in well-formed sentences, notice modifying words and phrases and how they function when used correctly, and note the relationships between phrases and clauses in well-formed sentences. When writing, make sure that subjects agree in number with their associated verbs and that main verbs are used to construct complete sentences; that pronouns agree in number, gender and person with their logical antecedents; and that verb forms are used consistently and logically. Be sure to use correctly formed modifying words, and make sure that modifying words and phrases are placed correctly to show logical modification. Use proper **subordination** and **coordination** to join ideas and to form complete sentences.	• When reading, pay attention to the parts of speech and how they agree in well-formed sentences, notice modifying words and phrases and how they function when used correctly, and note the relationships between phrases and clauses in well-formed sentences. When writing, make sure that subjects agree in number with their associated verbs and that main verbs are used to construct complete sentences; that pronouns agree in number, gender and person with their logical antecedents; and that verb forms are used consistently and logically. Be sure to use correctly formed modifying words, and make sure that modifying words and phrases are placed correctly to show logical modification. Use proper **subordination** and **coordination** to join ideas and to form complete sentences.	• When reading, pay attention to the parts of speech and how they agree in well-formed sentences, notice modifying words and phrases and how they function when used correctly, and note the relationships between phrases and clauses in well-formed sentences. When writing, make sure that subjects agree in number with their associated verbs and that main verbs are used to construct complete sentences; that pronouns agree in number, gender and person with their logical antecedents; and that verb forms are used consistently and logically. Be sure to use correctly formed modifying words, and make sure that modifying words and phrases are placed correctly to show logical modification. Use proper **subordination** and **coordination** to join ideas and to form complete sentences.

Score Band	50–59	60–69	70–80
Recognize Correctly Formed Sentences **Recognize correct sentence structure.**			
Academic Skills A typical student in this score band can do the following:	• Recognize correctly formed sentences	• Recognize correctly formed sentences	• Recognize correctly formed sentences
Suggestions for Improvement To advance to the next score band, students should focus on the following:	• When reading, pay attention to the parts of speech and how they agree in well-formed sentences, notice modifying words and phrases and how they function when used correctly, and note the relationships between phrases and clauses in well-formed sentences. When writing, make sure that subjects agree in number with their associated verbs and that main verbs are used to construct complete sentences; that pronouns agree in number, gender and person with their logical antecedents; and that verb forms are used consistently and logically. Be sure to use correctly formed modifying words, and make sure that modifying words and phrases are placed correctly to show logical modification. Use proper **subordination** and **coordination** to join ideas and to form complete sentences.	• When reading, pay attention to the parts of speech and how they agree in well-formed sentences, notice modifying words and phrases and how they function when used correctly, and note the relationships between phrases and clauses in well-formed sentences. When writing, make sure that subjects agree in number with their associated verbs and that main verbs are used to construct complete sentences; that pronouns agree in number, gender and person with their logical antecedents; and that verb forms are used consistently and logically. Be sure to use correctly formed modifying words, and make sure that modifying words and phrases are placed correctly to show logical modification. Use proper **subordination** and **coordination** to join ideas and to form complete sentences.	• This is the top score band and students who score at this level will have likely mastered the skills listed at all other levels. However, students can always benefit from more practice. We encourage students to review the skills and examples listed in the previous score bands.

Score Band	20–29	30–39	40–49
Manage Order and Relationships of Sentences and Paragraphs **Identify how to order the elements of a sentence or paragraph to improve clarity, meaning and the progression of ideas.**			
Academic Skills A typical student in this score band can do the following:	• This particular skill group is not represented in this score band. However, it is an important academic skill tested on the PSAT/NMSQT. We encourage students to review the skills and examples in the next highest score band, where this particular skill group does appear.	• This particular skill group is not represented in this score band. However, it is an important academic skill tested on the PSAT/NMSQT. We encourage students to review the skills and examples in the next highest score band, where this particular skill group does appear.	• Recognize effective sentence-combining techniques • Recognize the need to delete material in order to improve coherence • Recognize when more context is needed to support ideas • Recognize the need for additional information when developing an idea
Suggestions for Improvement To advance to the next score band, students should focus on the following:	• There are no specific suggestions for improvement for this skill group in this particular score band. However, we encourage students to review the suggestions and examples in other score bands.	• When reading, choose a paragraph and examine how writers use subordination and coordination to construct complete sentences that clearly express the relationships among ideas within a sentence. When writing, use sentence variety, employing both **subordination** and **coordination** to construct sentences. • When reading, develop an awareness of how writers achieve coherence within and among paragraphs by connecting ideas logically to one another. When writing, learn to add, delete or rearrange material in order to achieve coherence.	• When reading, develop an awareness of how writers achieve coherence within and among paragraphs by connecting ideas logically to each other. When writing, learn when to add, delete or rearrange material in order to achieve coherence. • When reading, choose a paragraph and examine how writers use subordination and coordination to construct complete sentences that clearly express the relationships among ideas within a sentence. When writing, use sentence variety, employing both **subordination** and **coordination** to construct sentences.

Score Band	50–59	60–69	70–80
Manage Order and Relationships of Sentences and Paragraphs **Identify how to order the elements of a sentence or paragraph to improve clarity, meaning and the progression of ideas.**			
Academic Skills A typical student in this score band can do the following:	• Recognize the need for additional information in order to improve coherence • Recognize effective sentence-combining techniques	• This particular skill group is not represented in this score band. However, it is an important academic skill tested on the PSAT/NMSQT. We encourage students to review the skills and examples in other score bands, where this particular skill group does appear.	• This particular skill group is not represented in this score band. However, it is an important academic skill tested on the PSAT/NMSQT. We encourage students to review the skills and examples in other score bands, where this particular skill group does appear.
Suggestions for Improvement To advance to the next score band, students should focus on the following:	• Students who score at this level will have likely mastered the skills listed at all previous levels. However, students can always benefit from more practice. We encourage students to review the skills and examples listed in the 40–49 and 50–59 score bands.	• Students who score at this level will have likely mastered the skills listed at all previous levels. However, students can always benefit from more practice. We encourage students to review the skills and examples listed in the 40–49 and 50–59 score bands.	• This is the top score band and students who score at this level will have likely mastered the skills listed at all other levels. However, students can always benefit from more practice. We encourage students to review the skills and examples listed in the 50–59 and 60–69 score bands.

PLAN Mathematics Test

Table 4: The College Readiness Standards

The Standards describe what students who score in the specified score ranges are *likely* to know and to be able to do. The ideas for progress help teachers identify ways of enhancing students' learning based on the scores students receive. The score range at the Benchmark level of achievement is highlighted.

		Basic Operations & Applications	*Probability, Statistics, & Data Analysis*	*Numbers: Concepts & Properties*
1–12	**Standards**	■ Students who score in the 1–12 range are most likely beginning to develop the knowledge and skills assessed in the other score ranges.		
	ideas for progress	■ practice and apply estimation and computation using whole numbers and decimals ■ choose the appropriate method of computation to solve multistep problems (e.g., calculator, mental, or pencil and paper) ■ practice selecting appropriate units of measure (e.g., inches or feet, hours or minutes, centimeters or meters) and converting between units ■ model and connect physical, verbal, and symbolic representations of money	■ interpret data from a variety of displays and use it in computation (e.g., mean, median, mode, range) ■ organize, display, and analyze data in a variety of ways	
13–15	**Standards**	■ Perform one-operation computation with whole numbers and decimals ■ Solve problems in one or two steps using whole numbers ■ Perform common conversions (e.g., inches to feet or hours to minutes)	■ Calculate the average of a list of positive whole numbers ■ Perform a single computation using information from a table or chart	■ Recognize equivalent fractions and fractions in lowest terms
	ideas for progress	■ investigate and build understanding of the concept of percentage as a comparison of a part to a whole ■ use multiple operations to solve multistep arithmetic problems	■ solve real-world problems that involve measures of central tendency (e.g., mean, median, mode) ■ interpret data from a variety of displays (e.g., box-and-whisker plot) and use it along with additional information to solve real-world problems ■ conduct simple probability experiments and represent results using different formats	■ recognize and apply place value, rounding, and elementary number theory concepts

Expressions, Equations, & Inequalities	*Graphical Representations*	*Properties of Plane Figures*	*Measurement*
■ model a variety of problem situations with expressions and/or equations ■ use the inverse relationships for the basic operations of addition and subtraction to determine unknown quantities	■ locate and describe points in terms of their position on the number line		■ identify line segments in geometric figures and estimate or calculate their measure
■ Exhibit knowledge of basic expressions (e.g., identify an expression for a total as $b + g$) ■ Solve equations in the form $x + a = b$, where a and b are whole numbers or decimals	■ Identify the location of a point with a positive coordinate on the number line		■ Estimate or calculate the length of a line segment based on other lengths given on a geometric figure
■ use mathematical symbols and variables to express a relationship between quantities (e.g., the number of 59¢ candy bars that you can buy for $5 must satisfy $59n \leq 500$) ■ evaluate algebraic expressions and solve simple equations using integers	■ locate and describe objects in terms of their position on the number line and on a grid	■ describe, compare, and contrast plane and solid figures using their attributes	■ distinguish between area and perimeter, and find the area or perimeter when all relevant dimensions are given

PLAN MATHEMATICS TEST

Table 4 (continued): The College Readiness Standards

The Standards describe what students who score in the specified score ranges are *likely* to know and to be able to do. The ideas for progress help teachers identify ways of enhancing students' learning based on the scores students receive. The score range at the Benchmark level of achievement is highlighted.

		Basic Operations & Applications	***Probability, Statistics, & Data Analysis***	***Numbers: Concepts & Properties***
16–19	**Standards**	■ Solve routine one-step arithmetic problems (using whole numbers, fractions, and decimals) such as single-step percent ■ Solve some routine two-step arithmetic problems	■ Calculate the average of a list of numbers ■ Calculate the average, given the number of data values and the sum of the data values ■ Read tables and graphs ■ Perform computations on data from tables and graphs ■ Use the relationship between the probability of an event and the probability of its complement	■ Recognize one-digit factors of a number ■ Identify a digit's place value
	ideas for progress	■ solve routine arithmetic problems that involve rates, proportions, and percents ■ model and solve problems that contain verbal and symbolic representations of money ■ do multistep computations with rational numbers	■ interpret data and use appropriate measures of central tendency to find unknown values ■ find the probability of a simple event in a variety of settings ■ gather, organize, display, and analyze data in a variety of ways to use in problem solving ■ conduct simple probability experiments, use a variety of counting techniques (e.g., Venn diagrams, Fundamental Counting Principle, organized lists), and represent results from data using different formats	■ apply elementary number concepts, including identifying patterns pictorially and numerically (e.g., triangular numbers, arithmetic and geometric sequences), ordering numbers, and factoring ■ recognize, identify, and apply field axioms (e.g., commutative)
20–23	**Standards**	■ Solve routine two-step or three-step arithmetic problems involving concepts such as rate and proportion, tax added, percentage off, and computing with a given average	■ Calculate the missing data value, given the average and all data values but one ■ Translate from one representation of data to another (e.g., a bar graph to a circle graph) ■ Determine the probability of a simple event ■ Exhibit knowledge of simple counting techniques	■ Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor
	ideas for progress	■ apply and use number properties to model and solve problems that involve reasoning with proportions ■ select and use appropriate units when solving problems that involve one or more units of measure	■ construct and analyze Venn diagrams to help determine simple probabilities	■ use the inverse relationships for the four basic operations, exponentiation, and root extractions to determine unknown quantities

Expressions, Equations, & Inequalities	*Graphical Representations*	*Properties of Plane Figures*	*Measurement*
■ Substitute whole numbers for unknown quantities to evaluate expressions ■ Solve one-step equations having integer or decimal answers ■ Combine like terms (e.g., $2x + 5x$)	■ Locate points on the number line and in the first quadrant	■ Exhibit some knowledge of the angles associated with parallel lines	■ Compute the perimeter of polygons when all side lengths are given ■ Compute the area of rectangles when whole number dimensions are given
■ create expressions that model mathematical situations using combinations of symbols and numbers ■ evaluate algebraic expressions and solve multistep first-degree equations	■ sketch and identify line segments, midpoints, intersections, and vertical and horizontal lines	■ describe angles and triangles using mathematical terminology and apply their properties	■ find area and perimeter of a variety of polygons by substituting given values into standard geometric formulas
■ Evaluate algebraic expressions by substituting integers for unknown quantities ■ Add and subtract simple algebraic expressions ■ Solve routine first-degree equations ■ Perform straightforward word-to-symbol translations ■ Multiply two binomials	■ Locate points in the coordinate plane ■ Comprehend the concept of length on the number line ■ Exhibit knowledge of slope	■ Find the measure of an angle using properties of parallel lines ■ Exhibit knowledge of basic angle properties and special sums of angle measures (e.g., 90°, 180°, and 360°)	■ Compute the area and perimeter of triangles and rectangles in simple problems ■ Use geometric formulas when all necessary information is given
■ identify, interpret, and generate symbolic representations that model the context of a problem ■ factor and perform the basic operations on polynomials ■ create and solve linear equations and inequalities that model real-world situations ■ solve literal equations for any variable	■ represent and interpret relationships defined by equations and formulas; translate between representations as ordered pairs, graphs, and equations; and investigate symmetry and transformations (e.g., reflections, translations, rotations)	■ recognize what geometric properties and relationships for parallel lines to apply to find unknown angle measures ■ recognize when to apply geometric properties and relationships of triangles to find unknown angle measures	■ apply a variety of strategies to determine the circumference or perimeter and the area for circles, triangles, rectangles, and composite geometric figures

PLAN MATHEMATICS TEST

Table 4 (continued): **The College Readiness Standards**

The Standards describe what students who score in the specified score ranges are *likely* to know and to be able to do. The ideas for progress help teachers identify ways of enhancing students' learning based on the scores students receive. The score range at the Benchmark level of achievement is highlighted.

		Basic Operations & Applications	***Probability, Statistics, & Data Analysis***	***Numbers: Concepts & Properties***
24–27	**Standards**	■ Solve multistep arithmetic problems that involve planning or converting units of measure (e.g., feet per second to miles per hour)	■ Calculate the average, given the frequency counts of all the data values ■ Manipulate data from tables and graphs ■ Compute straightforward probabilities for common situations ■ Use Venn diagrams in counting	■ Find and use the least common multiple ■ Order fractions ■ Work with numerical factors ■ Work with scientific notation ■ Work with squares and square roots of numbers ■ Work problems involving positive integer exponents ■ Work with cubes and cube roots of numbers ■ Determine when an expression is undefined
	ideas for progress	■ model and solve real-world problems that involve a combination of rates, proportions, and/or percents	■ find the probability of simple events, disjoint events, compound events, and independent events in a variety of settings using a variety of counting techniques	■ apply and use elementary number concepts and number properties to model and solve nonroutine problems that involve new ideas

Expressions, Equations, & Inequalities	*Graphical Representations*	*Properties of Plane Figures*	*Measurement*
■ Solve real-world problems using first-degree equations ■ Write expressions, equations, or inequalities with a single variable for common pre-algebra settings (e.g., rate and distance problems and problems that can be solved by using proportions) ■ Identify solutions to simple quadratic equations ■ Add, subtract, and multiply polynomials ■ Factor simple quadratics (e.g., the difference of squares and perfect square trinomials) ■ Solve first-degree inequalities that do not require reversing the inequality sign	■ Identify the graph of a linear inequality on the number line ■ Determine the slope of a line from points or equations ■ Match linear graphs with their equations ■ Find the midpoint of a line segment	■ Use several angle properties to find an unknown angle measure ■ Recognize Pythagorean triples ■ Use properties of isosceles triangles	■ Compute the area of triangles and rectangles when one or more additional simple steps are required ■ Compute the area and circumference of circles after identifying necessary information ■ Compute the perimeter of simple composite geometric figures with unknown side lengths
■ create and use basic families of functions (which include linear, absolute value, and quadratic) to model and solve problems in common settings ■ explore and use different methods to solve systems of equations ■ manipulate radical expressions (e.g., rationalize denominators)	■ graph linear equations and inequalities, determine slopes of lines, identify parallel and perpendicular lines, and find distances ■ identify characteristics of figures from a general equation	■ apply special right-triangle properties and the Pythagorean theorem to solve congruent and similar shape problems	■ apply a variety of strategies using relationships between perimeter, area, and volume to calculate desired measures

PLAN MATHEMATICS TEST

Table 4 (continued): **The College Readiness Standards**

The Standards describe what students who score in the specified score ranges are *likely* to know and to be able to do. The ideas for progress help teachers identify ways of enhancing students' learning based on the scores students receive. The score range at the Benchmark level of achievement is highlighted.

		Basic Operations & Applications	***Probability, Statistics, & Data Analysis***	***Numbers: Concepts & Properties***
28–32	**Standards**	■ Solve word problems containing several rates, proportions, or percentages	■ Calculate or use a weighted average ■ Interpret and use information from figures, tables, and graphs ■ Apply counting techniques ■ Compute a probability when the event and/or sample space are not given or obvious	■ Apply number properties involving prime factorization ■ Apply number properties involving even/odd numbers and factors/multiples ■ Apply number properties involving positive/negative numbers ■ Apply rules of exponents
	ideas for progress	■ solve problems that require combining multiple concepts	■ design and conduct probability investigations (e.g., how the margin of error is determined) and then determine, analyze, and communicate the results	■ explain, solve, and/or draw conclusions for complex problems using relationships and elementary number concepts

Expressions, Equations, & Inequalities	*Graphical Representations*	*Properties of Plane Figures*	*Measurement*
■ Manipulate expressions and equations ■ Write expressions, equations, and inequalities for common algebra settings ■ Solve linear inequalities that require reversing the inequality sign ■ Solve absolute value equations ■ Solve quadratic equations ■ Find solutions to systems of linear equations	■ Interpret and use information from graphs in the coordinate plane ■ Match number line graphs with solution sets of linear inequalities ■ Use the distance formula ■ Use properties of parallel and perpendicular lines to determine an equation of a line or coordinates of a point	■ Apply properties of 30°-60°-90°, 45°-45°-90°, similar, and congruent triangles ■ Use the Pythagorean theorem	■ Use relationships involving area, perimeter, and volume of geometric figures to compute another measure
■ formulate expressions, equations, and inequalities that require planning to accurately model real-world problems (e.g., direct and inverse variation)	■ solve and graph quadratic inequalities	■ make generalizations, arrive at conclusions based on conditional statements, and offer solutions for new situations that involve connecting mathematics with other content areas ■ investigate angle and arc relationships for circles	■ examine and compare a variety of methods to find areas of composite figures and construct scale drawings

Mathematics

Number and Operations

Understand types of numbers (integers, fractions, decimals), their properties and the correct order of operations. Perform computations correctly.

Score Band	20–29	30–39	40–49
Academic Skills A typical student in this score band can do the following:	• This particular skill group is not represented in this score band. However, it is an important academic skill tested on the PSAT/NMSQT. We encourage students to review the skills and examples in the next highest score band, where this particular skill group does appear.	• Apply an additive rule to find terms in an arithmetic **sequence** • Work with multiplication across compound **inequalities** • Use place value to round • Determine the least common multiple of three or more numbers • Identify and use appropriate inverse arithmetic **operations**	• Evaluate an **absolute value expression** by substitution • Apply two or more rules to compute terms in a **sequence** • Order fractions in an abstract setting (e.g., by finding an equivalent collection of fractions with variable numerators and common denominators) • Estimate square roots of whole numbers • Identify and **factor** constants from algebraic **expressions** • Work with a percent of a percent • Use properties of numbers and **sets** of numbers in abstract settings (e.g., even and odd numbers, multiples of three, perfect squares) • Recognize that division of whole numbers can produce fractions • Use the relationship between the exponent in **scientific notation** and the relative magnitude of a number
Suggestions for Improvement To advance to the next score band, students should focus on the following:	• Practice multiplying and dividing both sides of **inequalities** by whole numbers. • Practice rounding numbers to a specified place (e.g., the hundreds place). • Practice **factoring** whole numbers, and finding the common factors of three or more numbers.	• Practice evaluating **absolute value expressions** and graphing all the numbers that satisfy absolute value **equations** or **inequalities**. • Practice ordering fractions that have different denominators by rewriting the fractions with a common denominator. • Practice rewriting numbers in **scientific notation**.	• Practice solving measurement problems involving decimals and requiring the use of measurement units. • Practice solving measurement problems involving numbers between 0 and 1.

Score Band	50–59	60–69	70–80
Number and Operations **Understand types of numbers (integers, fractions, decimals), their properties and the correct order of operations. Perform computations correctly.**			
Academic Skills A typical student in this score band can do the following:	• Work with positive and negative **rational** numbers presented abstractly (e.g., on a number line, by using variables) • Work with decimals and perform unit conversions in solving word problems • Compare and order mixed numbers • Recognize that the solution to an algebraic **inequality** may be a number between 0 and 1 • Apply addition properties of **inequalities**	• Create and use proportions and ratios in solving multistep problems • Determine relative magnitudes for multiples and powers of numbers between 0 and 1 • Determine properties of numbers in an abstract setting	• Compute flexibly with compound numeric and algebraic proportions • Recognize that division by a number between 0 and 1 increases the value of a positive **expression**
Suggestions for Improvement To advance to the next score band, students should focus on the following:	• Practice ordering numbers that lie between 0 and 1 using decimal place values. • Practice problems that involve concepts like even/odd, prime/composite, "is a multiple of" and "is a **factor** of."	• Recognize that dividing a number by a number between 0 and 1 results in a larger number (e.g., "If Lee has 1 pound of corn meal, how many quarter-pound containers are needed to store the corn meal?" has the solution $\frac{1}{\frac{1}{4}} = 4$). • Practice proportion problems involving **expressions**, such as $x + 1$ (not just numbers and single variables).	• This is the top score band and students who score at this level will have likely mastered the skills listed at all other levels. However, students can always benefit from more practice. We encourage students to review the skills and examples listed in the 50–59 and 60–69 score bands.

Score Band	20–29	30–39	40–49
Algebra and Functions			
Solve problems using algebraic expressions and symbols to represent relationships, patterns and functions of different types.			
Academic Skills A typical student in this score band can do the following:	• This particular skill group is not represented in this score band. However, it is an important academic skill tested on the PSAT/NMSQT. We encourage students to review the skills and examples in the next highest score band, where this particular skill group does appear.	• Solve two-step algebra problems involving **symbolic manipulations** • Recognize when a simple **expression** such as $p + r$ acts like a single variable • Evaluate a rational **expression** in one variable (ratio of two linear expressions in x) • Recognize that whole number exponents represent repeated multiplication • Perform simple manipulations with **inequalities** • Determine the value of a second variable given the value of a first variable	• Solve two-step algebra problems involving perfect-square **quadratic equations** (e.g., if $x^2 = 16$, find the value of $(x + 2)(x - 2)$) • Choose and apply appropriate algebraic manipulations • Evaluate a compound algebraic radical expression to estimate the solution of a radical equation • Solve a system of **linear equations** • Draw conclusions from the shape of a graph
Suggestions for Improvement To advance to the next score band, students should focus on the following:	• Avoid errors when evaluating an **expression** in which the variable appears multiple times (e.g., the answer to "Evaluate $\frac{x+2}{x-2}$ at $x = 7$" is $\frac{7+2}{7-2}$ or $\frac{9}{5}$ or 1.8). • Practice evaluating and simplifying **expressions** that involve whole number exponents (e.g., the answer to "Evaluate x^3 at $x = 4$" is $4 \cdot 4 \cdot 4$, or 64; the answer to "Simplify $3x^2 + 7x^2$" is $3 \cdot x \cdot x + 7 \cdot x \cdot x = (3 + 7) \cdot x \cdot x = 10x^2$). • Practice simplifying **inequalities** using addition, subtraction, multiplication and division. • Pay attention to cases where the order of the **inequality** changes, such as when $3a < 6$ is multiplied by a negative number.	• Practice evaluating and simplifying **expressions** that involve square roots (e.g., the answer to "Evaluate $\sqrt{x^2 + 9}$ at $x = 4$" is $\sqrt{4 \cdot 4 + 9} = \sqrt{16 + 9} = \sqrt{25} = 5$, not $4 + 3$; that is, it is not correct to rewrite $\sqrt{x^2 + 9}$ as $x + 3$). • Practice solving systems of **linear equations** using substitution or elimination (e.g., "Solve $x + y = 3$ and $x - y = 3$" can be solved in two ways: rewrite $x + y = 7$ as $y = 7 - x$, then substitute to get $x - (7 - x) = 3$ or $2x - 7 = 3$, which gives $x = 5$, so $y = 7 - 5 = 2$; alternatively, add the two equations together to get $x + y + x - y = 7 + 3$ or $2x = 10$, so $x = 5$ and $5 + y = 7$, and so $y = 2$). • Also see suggestions for next score band.	• Practice evaluating and simplifying **expressions** that involve **exponent roots** (e.g., the answer to "Evaluate $x^{\frac{2}{3}}$ at $x = 4$" is the square root of $4 \cdot 4 \cdot 4$, i.e., the square root of 64, or 8). • Practice solving systems of **linear equations** that involve only variables (e.g., "Solve $x + y = a$ and $x - y = b$" has the solution $x = \frac{a+b}{2}$, $y = \frac{a-b}{2}$). • Practice finding the **slope-intercept** form of an **equation** of a line if you know the slope and y-intercept. • Practice evaluating an **expression** at another expression (instead of at a number) (e.g., "If $x = 5t - 2$, write $2x + 7$ in terms of t" has the answer $2(5t - 2) + 7$, or $10t + 3$ when simplified).

Score Band	50–59	60–69	70–80
Algebra and Functions **Solve problems using algebraic expressions and symbols to represent relationships, patterns and functions of different types.**			
Academic Skills A typical student in this score band can do the following:	• Recognize that finding a common **factor** is required to simplify an algebraic rational **expression** • Apply a given nonlinear model to determine a value • Use properties of exponents, including fractional exponents • Solve **systems of equations** (e.g., a system of **linear equations** involving parameters or a mixed system of **linear** and **nonlinear equations**) • Determine the result of a composition of **functions** (expressed using function notation) • Work with new definitions/novel situations involving multiple variables and an unknown not isolated on one side of an equation • Determine the **slope-intercept** form of the **equation** of a line given information about a point and a line perpendicular to the given line	• Square a binomial; complete a square • Be fluent in the manipulations that preserve equality in an algebraic **equation** • Treat a ratio of two variables as an object • Fluently apply the laws of exponents, including fractional exponents, with variables as bases • Understand that a **polynomial** is determined by its coefficients • Interpret information about a **function** from its graph	• Treat a compound algebraic rational **expression** as an object • Work fluently with compound algebraic **inequalities** • Use the idea of inverse function (given an output from a **function**, find the corresponding input)
Suggestions for Improvement To advance to the next score band, students should focus on the following:	• Practice evaluating and simplifying **expressions** that involve fractional exponents. • Recognize that it is often efficient to group or regroup variables together as one big **expression** (e.g., "If $a = 3c$ and $b = 4c$, then what is the value of $\frac{a^2 + b^2}{c^2}$?" can be solved by rewriting $\frac{a^2 + b^2}{c^2}$ as $\left(\frac{a}{c}\right)^2 + \left(\frac{b}{c}\right)^2$ and using $\frac{a}{c} = 3, \frac{b}{c} = 4$). • Know that if two **polynomials** are equal, then their coefficients are equal (e.g., "If $x^2 + ax + b = (x - 2)(x - 3)$, what is the value of $a - b$?" can be solved by rewriting $(x - 2)(x - 3) = x^2 - 5x + 6$ to find that $a = -5, b = 6$, so $a - b = -11$).	• Practice "inverting" **functions** for a specific value, or in general (e.g., "If $f(x) = 2x + 5$, what value of x makes $f(x) = 13$? What value of x makes $f(x) = 4t + 1$?").	• This is the top score band and students who score at this level will have likely mastered the skills listed at all other levels. However, students can always benefit from more practice. We encourage students to review the skills and examples listed in the 50–59 and 60–69 score bands.

Score Band	20–29	30–39	40–49
Geometry and Measurement **Solve problems based on understanding the properties of shapes, such as triangles and circles, and the spatial relationships between angles and lines.**			
Academic Skills A typical student in this score band can do the following:	• Find the measure of an angle or a length in a one-step problem using the properties of a figure (e.g., given the measures of two angles of a triangle, compute the measure of the remaining angle)	• Find the measure of an angle in a two-step problem using the properties of a figure (vertical angles, angles formed by a transversal, angle sum property of a triangle or quadrilateral)	• Locate a point on a line in the xy-**plane** from given information (e.g., distance from another point on the line; midpoint of a segment; intersection of the line with a perpendicular through a given point) • Work fluently with both linear and area measurements in a single problem
Suggestions for Improvement To advance to the next score band, students should focus on the following:	• Take care to identify the specific information for which a problem asks (e.g., For the question "In triangle ABC, the measure of angle A is 35 degrees and the measure of angle C is 65 degrees. If B is the midpoint of segment $\overline{AD}$, what is the measure of angle CBD?" recognize that $180° - (35 + 65)°$ is not the final answer).	• Practice locating specific points in the **coordinate plane** (e.g., midpoints of line segments, points that lie a specific distance along a horizontal or vertical line from another point on that line). • Distinguish between linear measures and area measures and their units.	• Practice multistep problems that involve several concepts (e.g., relationships between angles and sides of **isosceles**/**equilateral**/special right **triangles**, relationships between angles formed when **parallel lines** are cut by a transversal, angle sum properties and exterior angle relationships for triangles and quadrilaterals, **complementary**/**supplementary angles**).

Score Band	50–59	60–69	70–80
Geometry and Measurement			
Solve problems based on understanding the properties of shapes, such as triangles and circles, and the spatial relationships between angles and lines.			
Academic Skills A typical student in this score band can do the following:	• Apply multiple properties of angles and figures in a multistep problem (e.g., **isosceles**/**equilateral** triangle relationships, **parallel line relationships**, sum of angles in a triangle, **complementary**/**supplementary angles**, exterior angles of polygons) • Use properties of special right triangles	• Find the slope of a line in the xy-**plane** (e.g., compute the **slope** of a line from a graph showing its **intercepts**, apply the relationship between slopes of perpendicular lines) • Use symmetry to locate a point in the xy-**plane** • Understand how changes in linear measures affect associated area measures	• Work fluently with both area and volume measures in a single problem
Suggestions for Improvement To advance to the next score band, students should focus on the following:	• Practice finding the slope of lines from two given points • Practice locating specific points in the **coordinate plane** (e.g., a point that is the **reflection** of a given point across a given line)	• Distinguish between area and surface area measures and volume measures and their units	• This is the top score band and students who score at this level will have likely mastered the skills listed at all other levels. However, students can always benefit from more practice. We encourage students to review the skills and examples listed in the 50–59 and 60–69 score bands.

Score Band	20–29	30–39	40–49
Data, Statistics and Probability **Analyze data, understand descriptive statistics, make inferences and determine the likelihood that certain events will occur.**			
Academic Skills A typical student in this score band can do the following:	• This particular skill group is not represented in this score band. However, it is an important academic skill tested on the PSAT/NMSQT®. We encourage students to review the skills and examples in the next highest score band, where this particular skill group does appear.	• Interpret data from a **scatterplot** (with or without a line of best fit) • Identify the outcomes in a sample space that make up a specified event	• Read and interpret data presented in a **histogram** • Read and interpret data presented in a **bar graph** • Understand how the **mean** depends on the data and how the mean changes with new data and changes in data • Compute a probability given a sample space, or determine information about the sample space given a probability • Determine the outcomes that make up an event using the complement of the event
Suggestions for Improvement To advance to the next score band, students should focus on the following:	• Organize data you've read from a graph or table on your own paper in a way that you can easily refer to (e.g., If a table lists the number of students age 12, age 13 and age 14, and you are asked how many students are older than 12, then write down the number of students who are 13 and the number who are 14 and then add the two numbers. This makes it easier to avoid mistakes that can happen when a person tries to do too much in her/his head). • Practice reading and drawing conclusions from **scatterplots**.	• Practice problems where you need to compute the **mean of a data set** and then recompute the mean after some data were changed or added. • Practice reading and drawing conclusions from **bar graphs** and **histograms**.	• Recognize that **circle graphs** represent percentages of a whole, not counts. • Practice probability problems where you can count out (or list on paper, for example) the number of "good" outcomes and the total number of outcomes.

Score Band	50–59	60–69	70–80
Data, Statistics and Probability **Analyze data, understand descriptive statistics, make inferences and determine the likelihood that certain events will occur.**			
Academic Skills A typical student in this score band can do the following:	• Synthesize information from a **circle graph** (coordinating sector angle with percent and/or count) • Interpret data from a table in which the categories are defined by intervals of measures • Compute a probability as the ratio of all successful outcomes to all possible outcomes • Find the probability of a favorable event by computing the probability of the complementary event	• This particular skill group is not represented in this score band. However, it is an important academic skill tested on the PSAT/NMSQT. We encourage students to review the skills and examples in other score bands, where this particular skill group does appear.	• This particular skill group is not represented in this score band. However, it is an important academic skill tested on the PSAT/NMSQT. We encourage students to review the skills and examples in other score bands, where this particular skill group does appear.
Suggestions for Improvement To advance to the next score band, students should focus on the following:	• Students who score at this level will have likely mastered the skills listed at all previous levels. However, students can always benefit from more practice. We encourage students to review the skills and examples listed in the 30–39 and 40–49 score bands.	• Students who score at this level will have likely mastered the skills listed at all previous levels. However, students can always benefit from more practice. We encourage students to review the skills and examples listed in the 40–49 and 50–59 score bands.	• This is the top score band and students who score at this level will have likely mastered the skills listed at all other levels. However, students can always benefit from more practice. We encourage students to review the skills and examples listed in the 40–49 and 50–59 score bands.

Score Band	20–29	30–39	40–49
Problem Solving			
Solve abstract and practical problems, applying and adapting a variety of strategies. Monitor progress and evaluate answers in terms of questions asked.			
Academic Skills A typical student in this score band can do the following:	• This particular skill group is not represented in this score band. However, it is an important academic skill tested on the PSAT/NMSQT. We encourage students to review the skills and examples in the next highest score band, where this particular skill group does appear.	• Identify what is being asked • Solve arithmetic word problems involving whole number and fraction multiplication • Extract information from a written description to extend a diagram or sketch during problem solving • Coordinate written descriptions and symbolic information to extend additive patterns	• Answer the question asked • Extract and use multiple pieces of information from a problem situation during problem solving • Coordinate information from written descriptions and composite geometric figures during problem solving • Coordinate written descriptions and symbolic information to extend multiplicative patterns
Suggestions for Improvement To advance to the next score band, students should focus on the following:	• Practice identifying the **unknowns** in a problem situation.	• Practice identifying the **unknowns** in a problem situation and using that information to determine what would answer the question asked.	• Practice (a) identifying the **unknowns** in a problem situation, (b) organizing the information in tables or models (e.g., **equations**, sketches or graphs), and (c) creating a plan for what mathematical **operations** or information to gather to answer the question asked.

Score Band	50–59	60–69	70–80
Problem Solving			
Solve abstract and practical problems, applying and adapting a variety of strategies. Monitor progress and evaluate answers in terms of questions asked.			
Academic Skills A typical student in this score band can do the following:	• Determine a strategy and follow through to complete all steps in a multistep problem-solving situation to answer the question asked • Extract, extend and coordinate information during multistep problem solving • Extract, extend and record information about lengths or angle measures on composite geometric figures	• Identify and develop relevant information for problem solving in complex problem situations • Coordinate information and generate models for relationships among variables and quantities • Coordinate information and generate models for relationships among geometric properties and measurements • Coordinate information and generate models for relationships among geometric and graphical properties • Coordinate information and generate models for relationships about rates of change • Coordinate, extend and record information about geometric properties and measurements on composite geometric figures • Coordinate and use multiple problem-solving strategies to solve a complex problem (e.g., identify pertinent information, expand, simplify, rewrite one or more **expressions** in terms of a particular variable, substitute a value and simplify again)	• Analyze complex figures dynamically to determine whether parts can be rearranged to create simpler figures • Analyze and coordinate multiple conditions in solving combinatorial problems
Suggestions for Improvement To advance to the next score band, students should focus on the following:	• Practice (a) identifying the **unknowns** in a problem situation, (b) organizing the information in tables or models (e.g., **equations**, sketches or graphs), (c) creating a plan for what mathematical **operations** or information to gather, and (d) carrying out the plan to answer the question asked.	• Practice (a) identifying the **unknowns** in a problem situation, (b) organizing the information in tables or models (e.g., **equations**, sketches or graphs), (c) creating a plan for what mathematical **operations** or information to gather, (d) carrying out the plan to answer the question asked, and (e) checking the answer to ensure it makes sense in the context of the values and relationships given in the question.	• This is the top score band and students who score at this level will have likely mastered the skills listed at all other levels. However, students can always benefit from more practice. We encourage students to review the skills and examples listed in the 50–59 and 60–69 score bands.

Score Band	20–29	30–39	40–49
Representation **Use and translate among representations including verbal, numerical, symbolic and graphical to communicate mathematical ideas and solve problems.**			
Academic Skills A typical student in this score band can do the following:	• This particular skill group is not represented in this score band. However, it is an important academic skill tested on the PSAT/NMSQT. We encourage students to review the skills and examples in the next highest score band, where this particular skill group does appear.	• Represent a geometric figure from a simple verbal description • Convert from fractions to decimals • Translate **operations** from verbal descriptions to symbols	• Represent given information in a **coordinate plane** • Extend a given representation based on given and derived relationships • Translate written descriptions into algebraic and numeric **expressions**, **equations** and **inequalities** • Translate between words and symbols in contexts involving comparison, addition and subtraction • Use multiple representations for a number (e.g., a whole number in decimal notation and in **scientific notation**)
Suggestions for Improvement To advance to the next score band, students should focus on the following:	• Practice converting between fractions and decimals, both by hand and by using a calculator. • Practice sketching drawings when appropriate (your drawings should be accurate enough that you can understand them later). • Practice converting verbal descriptions to **expressions**, **equations** or **inequalities**, choosing variable letters that are meaningful to you (e.g., "The sum of Tori's height and David's height is 125 inches" becomes $T + D = 125$).	• Practice converting numbers between (**proper** or **improper**) **fractions**, decimals and **scientific notation**, both by hand and by using a calculator. • Practice locating and drawing points that satisfy certain conditions in the **coordinate plane**. • Practice converting verbal descriptions to **expressions**, **equations** or **inequalities**, choosing variable letters that are meaningful to you (e.g., "Tori's height is 5 inches less than David's height" becomes $T = D - 5$).	• When working with a **geometric representation**, draw a sketch, including and labeling all features specified in the problem and any additional features that can be determined from the given information (your drawings should be accurate enough that you can understand them later).

Score Band	50–59	60–69	70–80
Representation **Use and translate among representations including verbal, numerical, symbolic and graphical to communicate mathematical ideas and solve problems.**			
Academic Skills A typical student in this score band can do the following:	• Visualize/create 1-D and 2-D **geometric representations** • Dynamically analyze/visualize information in a geometric context • Translate between verbal and symbolic representations of linear relationships	• Work with 2-D and 3-D **geometric representations** • Create an extended proportion or ratio	• Visualize/create 2-D and 3-D **geometric representations**
Suggestions for Improvement To advance to the next score band, students should focus on the following:	• When working with more complex **geometric representations**, sketch a drawing, including and labeling all features specified in the problem and any additional features that can be determined from the given information (your drawings should be accurate enough that you can understand them later). • When working with multiple ratios in a problem, try to recognize when one or more of the ratios represents the same value.	• When working with 2-D and 3-D **geometric representations**, sketch a drawing, including and labeling all features specified in the problem and any additional features that can be determined from the given information (your drawings should be accurate enough that you can understand them later).	• This is the top score band and students who score at this level will have likely mastered the skills listed at all other levels. However, students can always benefit from more practice. We encourage students to review the skills and examples listed in the 50–59 and 60–69 score bands.

Score Band	20–29	30–39	40–49
Reasoning			
Develop and use mathematical arguments and proofs to explore the truth of conjectures and justify conclusions.			
Academic Skills A typical student in this score band can do the following:	• This particular skill group is not represented in this score band. However, it is an important academic skill tested on the PSAT/NMSQT. We encourage students to review the skills and examples in the next highest score band, where this particular skill group does appear.	• Test values to get a sense of what might be true • Pay attention to the word "not"	• Take into account multiple conditions • Make and test conjectures about number properties • Recognize when the smallest or largest value gives a solution of a problem
Suggestions for Improvement To advance to the next score band, students should focus on the following:	• If you are not sure that an **equation** or **inequality** about numbers is true or false, try substituting a few numbers. Depending on the problem, you should use whole numbers, fractions and decimals, as well as both positive and negative numbers. • Read carefully for words like "not" (e.g., "Which number or numbers in the following list are not **factors** of 30: 2, 3, 5, 12, 15?").	• If you are not sure that a property of whole numbers expressed in terms of variables is true or false, try substituting a few numbers. Depending on the problem, you should use both positive and negative numbers (e.g., "If x and y are odd, then $x^3 + y^3$ is positive and even" is false if you let $x = -1$ and $y = 1$). • When solving an algebra problem with only one variable, pay attention to the smallest and largest possible numbers that make sense to substitute for the variable (when such values exist).	• If you are not sure that a statement about numbers is true or false, try substituting a few numbers. Depending on the problem, you should use both positive and negative numbers, as well as fractions and decimals (e.g., The statement "If $x^2 < y^2$ and $y^2 < z^2$ must be true, then $x < z$ must also be true" is false if you let $x = 1$, $y = 2$ and $z = 3$, even though it appears to be true if you use an example such as $x = 1$, $y = 2$ and $z = -3$).

Score Band	50–59	60–69	70–80
Reasoning			
Develop and use mathematical arguments and proofs to explore the truth of conjectures and justify conclusions.			
Academic Skills A typical student in this score band can do the following:	• Make, test and/or investigate multiple conjectures about relationships between numbers • Attend to the difference between "can" and "must" (a statement that can be true is not necessarily true)	• Synthesize and organize information using multiple conditions • Distinguish between a logical condition and its converse (e.g., "If a block is green, then it is a cube" is not logically equivalent to "If a block is a cube, then it is green") • Determine the truth of a statement in settings where not all information can be determined • Recognize that a statement and its contrapositive are logically equivalent (e.g., "If a block is green, then it is a cube" is logically equivalent to "If a block is not a cube, then it is not green") • Recognize when two compound statements can/cannot both be true (e.g., two **inequalities**) • Recognize the effect of quantifier words such as "all," "some" or "none" on the truth of a statement • Recognize when a partial solution of a problem gives the needed information	• Work with conditions that **constrain the value of a variable** • Understand when conclusions can and cannot be drawn from examples • Know when it is appropriate to create a **constraint for a variable** • Identify values of constraints that maximize a given **expression**
Suggestions for Improvement To advance to the next score band, students should focus on the following:	• Recognize that a problem can be answered even though some information may not be determined (e.g., "In triangle ABC, side $\overline{BC}$ is longer than side $\overline{AC}$, and angle C is acute. Which angle is larger: angle A or angle B?" can be answered even though not enough information is given to find the measures of any of the angles or sides). • Practice drawing **Venn diagrams** for several quantified statements (e.g., "All students are enrolled in a Spanish class. Some students enrolled in Spanish are enrolled in French. No students enrolled in German are enrolled in French").	• Practice working problems where the **variables are constrained** (e.g., to determine the truth of "If $a + b + c = 180$ and $c < 120$, then $a + b < 90$," try choosing several values for c (say, $c = 0$, $c = 90$, $c = 119$) and then see if $a + b$ is less than 90 in all cases). • Look for counterexamples to statements (e.g., to determine the truth of "If $x^2 + y^2 + z^2$ is odd, then x, y and z are all odd," try choosing an even value for x (say, $x = 2$), and then see if you can choose values for y and z that make $x^2 + y^2 + z^2$ odd).	• This is the top score band and students who score at this level will have likely mastered the skills listed at all other levels. However, students can always benefit from more practice. We encourage students to review the skills and examples listed in the 50–59 and 60–69 score bands.

Score Band	20–29	30–39	40–49
Connections			
Connect ideas from different areas of mathematics (particularly geometry and algebra) to state or solve abstract or applied problems.			
Academic Skills A typical student in this score band can do the following:	• This particular skill group is not represented in this score band. However, it is an important academic skill tested on the PSAT/NMSQT. We encourage students to review the skills and examples in the next highest score band, where this particular skill group does appear.	• Use variables in a geometric context (e.g., work with unknown angle measurements identified by x and y)	• Use variables in areas other than algebra (e.g., in creating **equations** to describe geometric relationships)
Suggestions for Improvement To advance to the next score band, students should focus on the following:	• Practice using different variables to label unknown values on diagrams (e.g., lengths or angle measures).	• Practice using ideas from algebra—particularly how to represent relationships among values, using variables—to solve geometric and number property problems (e.g., represent the sum of three consecutive integers as $n + (n + 1) + (n + 2)$, instead of as $x + y + z$, to connect the fact that the integers are consecutive to their representation).	• Practice coordinating ideas from algebra and data to ratios, proportions and percents (e.g., determining a percent of a percent or translating information from a **circle graph** into appropriate units of measurement). • Practice working with coordinate geometry and **algebraic representations of rate and slope**.

Mathematics, continued

Score Band	50–59	60–69	70–80
Connections			
Connect ideas from different areas of mathematics (particularly geometry and algebra) to state or solve abstract or applied problems.			
Academic Skills A typical student in this score band can do the following:	• Use connections between areas of mathematics such as algebra and geometry (e.g., connect geometric slope with an algebraic **expression**) • Use connections between areas of mathematics such algebra and data, statistics and probability (e.g., compute **mean** with algebraic **expressions**) • Use connections between areas of mathematics such as algebra and number/**operations** (e.g., creating and manipulating proportions involving variables) • Use connections between areas of mathematics such as number/**operations** and data, statistics and probability (e.g., interpret percents in **circle graphs**)	• Use connections between areas of mathematics such as algebra and coordinate geometry • Use connections between areas of mathematics such as plane and coordinate geometry • Use connections between areas of mathematics such as geometry and number/**operations**	• Use connections among multiple areas of mathematics such as algebra, Euclidean geometry and coordinate geometry • Use connections among multiple areas of mathematics such as number theory, algebra and geometry • Use connections among multiple areas of mathematics such as measurement, 2-D geometry and 3-D geometry
Suggestions for Improvement To advance to the next score band, students should focus on the following:	• Practice working with coordinate geometry and algebraic representations of **functions** (e.g., graphing a given function or given a graph of two lines, determining the linear functions that would generate the graph). • Practice working with coordinate and plane geometry (e.g., given the coordinates of four points, determine the figure defined by connecting the points and determine a new set of vertices for the figure after a transformation).	• Practice working with coordinate geometry and algebraic representations of **nonlinear functions** (e.g., given the graph of a **parabola**, determine the function that would generate the graph). • Practice visualizing and sketching surfaces and volumes in three dimensions (e.g., create a sketch clear enough that values can be labeled and insight gained into the relationships between distances, surfaces and volumes associated with the sketched figure).	• This is the top score band and students who score at this level will have likely mastered the skills listed at all other levels. However, students can always benefit from more practice. We encourage students to review the skills and examples listed in the 50–59 and 60–69 score bands.

Score Band	20–29	30–39	40–49
Communication			
Express mathematical ideas precisely and communicate them coherently and clearly in the language and notation of mathematics.			
Academic Skills A typical student in this score band can do the following:	• This particular skill group is not represented in this score band. However, it is an important academic skill tested on the PSAT/NMSQT. We encourage students to review the skills and examples in the next highest score band, where this particular skill group does appear.	• Use the term "place value" and the names for specific place values (e.g., "round to the nearest tenth") • Use the term "trapezoid" • Use the term "product" • Use the term "sum" • Use the term "right angle"	• Use the terms "not" and "cannot" • Use the term "coordinates" • Use the term "midpoint" • Use the term "distance" (on a number line or graph) • Use the term "**absolute value**" • Use the term "selected at random" • Use the term "probability" • Use the term "arithmetic **mean**" • Use the terms "greater than" vs. "more than" vs. "increased by"; "less than" vs. "fewer than" vs. "decreased by" • Use the term "consecutive" (e.g., three consecutive odd integers) • Use the term "digit" • Use the terms "whole number **factor**" or "divisor" • Use function notation: $f(8)$, $g(2)$
Suggestions for Improvement To advance to the next score band, students should focus on the following:	• Practice identifying properties and making sketches of basic geometric shapes (e.g., square, rectangle, rhombus, trapezoid, **isosceles triangle**, **equilateral triangle**, right triangle). • Practice translating mathematical descriptions of relationships among numbers into symbolic sentences (e.g., "If the sum of two whole numbers is 6, what is the greatest possible value of the product of the two numbers?" could be written as, "If a and b are whole numbers and $a + b = 6$, what is the biggest value for $a \cdot b$?"). • To improve understanding of mathematical terms, write a problem using mathematical language, ask someone else to solve it and talk with them about the solution.	• Practice keeping track of all the information in a problem by organizing it in written form (e.g., tables of information, **expressions**, **equations** or sketches). • To improve understanding of mathematical terms, write a problem using mathematical language, ask someone else to solve it and talk with them about the solution. • Also see suggestions for next score band.	• Practice distinguishing among basic geometric shapes and their associated properties (e.g., some right triangles are isosceles, like a 45-45-90, and some are not, like a 30-60-90). • Practice posing problems about geometric figures (including problems about perimeter and area measurements for circles and irregular figures composed of several simpler shapes). • To improve understanding of mathematical terms, write a problem using mathematical language, ask someone else to solve it and talk with them about the solution.

Score Band	50–59	60–69	70–80
Communication			
Express mathematical ideas precisely and communicate them coherently and clearly in the language and notation of mathematics.			
Academic Skills A typical student in this score band can do the following:	• Use the term "parallel" • Use the term "y-intercept" • Use the term "rate" • Use the term "congruent" • Use the term "equilateral" • Use the term "isosceles" • Use the term "perpendicular" • Use the terms "radius" or "diameter" • Use the term "at least"	• Use the notation and terms "in terms of" (e.g., if $r = 2t$ and $t = 3w$, what is $r + w$ in terms of t?) • Use the term "face" (e.g., face of a cube) • Use the term "**reflection**" (e.g., across the x-axis) • Use the term "tangent to" • Use the terms "all," "some" and "none" • Use the term "x-intercepts" • Use the term "median"	• Use the term "arc" • Use the notation π • Use the term "sphere" • Use the term "cylinder" • Use the term "volume" • Use function notation (in complex/abstract problem situations)
Suggestions for Improvement To advance to the next score band, students should focus on the following:	• Practice posing problems using algebra and coordinate geometric figures (including problems about **piecewise-linear** and quadratic **functions**). • To improve understanding of mathematical terms, write a problem using mathematical language, ask someone else to solve it and talk with them about the solution.	• Practice posing problems using algebra and 3-D geometric figures (including problems about surface areas and volumes of shapes composed of three or more simpler figures). • To improve understanding of mathematical terms, write a problem using mathematical language, ask someone else to solve it and talk with them about the solution.	• This is the top score band and students who score at this level will have likely mastered the skills listed at all other levels. However, students can always benefit from more practice. We encourage students to review the skills and examples listed in the 50–59 and 60–69 score bands.