

COLLEGE READINESS STANDARDS

For EXPLORE[®], PLAN[®], and the ACT

ACT[®]

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What do
EXPLORE, PLAN,
and ACT scores
tell me about *what
my students know?*

Introduction

College Readiness Standards and the EPAS System

ACT’s Educational Planning and Assessment System (EPAS™) is an integrated series of assessment and career planning programs—EXPLORE® (grades 8 and 9), PLAN® (grade 10), and the ACT (grades 11 and 12)—designed to help students increase their academic readiness for college. Specifically, each program measures student achievement in English, mathematics, reading, and science. (The ACT also includes an optional Writing Test.) EPAS, a curriculum- and standards-based system, is ideal for connecting teaching, learning, and assessment to impact student growth from grade 8 through 12.

At the foundation of the EPAS programs are ACT’s College Readiness Standards. The Standards offer learning strategies that are likely to help students meet state standards and acquire the more advanced concepts associated with higher EPAS test scores and, more importantly, increased college readiness.

What Are ACT’s College Readiness Standards?

College Readiness Standards are detailed, research-based descriptions of the skills and knowledge associated with what students are *likely* to know and to be able to do based on their EXPLORE, PLAN, and/or ACT test scores. For each content area—English, mathematics, reading, and science—Standards are provided for six score ranges along a scale common to EXPLORE (1–25), PLAN (1–32), and the ACT (1–36). Standards for the optional ACT Writing Test have also been developed, although on a different score scale (2–12). The Standards are organized by strands—the column headings at the top of the page.

The common score scale ensures that skills associated with each score range are identical regardless of the test used to obtain the score. As the tests increase in complexity from EXPLORE to PLAN to the ACT, the Standards ranges reflect this. Therefore, Standards for the 28–32 score

range are specific to PLAN and the ACT, while those for the 33–36 score range are specific to the ACT only.

Since the EPAS programs measure students’ progressive academic development, the Standards are cumulative. That is, a student scoring in the 24–27 score range is likely able to demonstrate the skills associated with the 13–15, 16–19, and 20–23 score ranges as well. This enables EPAS to provide seamless data describing student achievement over time from grade 8 through 12.

Why Are College Readiness Standards Needed?

The Standards were developed in response to the need for better information about student achievement and to answer the often-asked question, What does a given score on EXPLORE, PLAN, or the ACT really mean? The Standards serve as a direct link between what students have learned, what they are ready to learn next, and what they must learn before leaving high school in order to be prepared for college. The Standards are an effective tool for enhancing student learning based on test scores that students earn. The Standards in English, mathematics, reading, and science are complemented by ideas for progress–brief descriptions of learning experiences from which students might benefit.

****Success is defined as a 50% or higher probability of earning a B or higher in the corresponding college course or courses.***

What Are ACT’s College Readiness Benchmark Scores?

While the College Readiness Standards describe the skills students likely have based on their EPAS test scores, ACT’s College Readiness Benchmark Scores, given in the table below, are early indicators of likely college success based on those same scores. College Readiness Benchmark Scores for the ACT represent median test scores that are predictive of student success* in relevant college courses. The EXPLORE and PLAN Benchmark Scores are indicative of probable readiness for college-level work by the time the student graduates from high school. Used together, the Standards and the Benchmark Scores provide an effective means for communicating college readiness expectations to middle and high schools and for measuring progress toward them.

College Readiness Benchmark Scores			
Subject Test	ACT Test Score	PLAN Test Score	EXPLORE Test Score
English	18	15	13
Mathematics	22	19	17
Reading	21	17	15
Science	24	21	20

ENGLISH

COLLEGE READINESS STANDARDS

Score Range		<i>Topic Development in Terms of Purpose and Focus</i>	<i>Organization, Unity, and Coherence</i>	<i>Word Choice in Terms of Style, Tone, Clarity, and Economy</i>
1–12	Standards	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> write short texts, in a variety of genres, illustrating simple organization use paragraphing as an organizational device 	<ul style="list-style-type: none"> 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., <i>really, very, big, kind of</i>)
13–15	Standards		<ul style="list-style-type: none"> Use conjunctive adverbs or phrases to show time relationships in simple narrative essays (e.g., <i>then, this time</i>) 	<ul style="list-style-type: none"> Revise sentences to correct awkward and confusing arrangements of sentence elements Revise vague nouns and pronouns that create obvious logic problems
	ideas for progress	<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> write many simply organized short texts of various genres revise writing to ensure that information is in the best order 	<ul style="list-style-type: none"> identify and revise obviously wordy, redundant, or cluttered material
16–19	Standards	<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> Select the most logical place to add a sentence in a paragraph 	<ul style="list-style-type: none"> Delete obviously synonymous and wordy material in a sentence Revise expressions that deviate from the style of an essay
	ideas for progress	<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> revise writing to make it more concise and precise discuss and model tone and style

<i>Sentence Structure and Formation</i>	<i>Conventions of Usage</i>	<i>Conventions of Punctuation</i>
<ul style="list-style-type: none"> ■ vary sentence length by combining simple sentences ■ check writing to make sure verb tenses are consistent 	<ul style="list-style-type: none"> ■ make sure to use adjectives like <i>well</i>, <i>less</i>, and <i>worst</i> correctly 	<ul style="list-style-type: none"> ■ learn to recognize when commas are overused
<ul style="list-style-type: none"> ■ Use conjunctions or punctuation to join simple clauses ■ Revise shifts in verb tense between simple clauses in a sentence or between simple adjoining sentences 	<ul style="list-style-type: none"> ■ 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 	<ul style="list-style-type: none"> ■ Delete commas that create basic sense problems (e.g., between verb and direct object)
<ul style="list-style-type: none"> ■ revise writing to correct glaring shifts in verb tense or voice 	<ul style="list-style-type: none"> ■ revise writing to correct basic grammar and punctuation errors ■ practice and understand correct usage of common homonyms (e.g., <i>their/there</i>, <i>past/passed</i>) 	<ul style="list-style-type: none"> ■ practice using punctuation correctly in simple sentences (e.g., "He ran, jumped, and swam.") ■ check for and correct unnecessary commas
<ul style="list-style-type: none"> ■ 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 	<ul style="list-style-type: none"> ■ Solve such grammatical problems as whether to use an adverb or 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 <i>there</i> and <i>their</i>, <i>past</i> and <i>passed</i>, and <i>led</i> and <i>lead</i> 	<ul style="list-style-type: none"> ■ 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)
<ul style="list-style-type: none"> ■ experiment with writing more sophisticated sentences; check to ensure verbs agree with subjects and modifiers don't dangle 	<ul style="list-style-type: none"> ■ revise sentences to ensure that each verb agrees with its subject when there is some text between the two 	<ul style="list-style-type: none"> ■ use commas to set off parenthetical phrases

ENGLISH
(continued)

COLLEGE READINESS STANDARDS

Score Range		<i>Topic Development in Terms of Purpose and Focus</i>	<i>Organization, Unity, and Coherence</i>	<i>Word Choice in Terms of Style, Tone, Clarity, and Economy</i>
20–23	Standards	<ul style="list-style-type: none"> ■ Identify the central idea or main topic of a straightforward piece of writing ■ Determine relevancy when presented with a variety of sentence-level details 	<ul style="list-style-type: none"> ■ Use conjunctive adverbs or phrases to express straightforward logical relationships (e.g., <i>first, afterward, in response</i>) ■ Decide the most logical place to add a sentence in an essay ■ Add a sentence that introduces a simple paragraph 	<ul style="list-style-type: none"> ■ 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	<ul style="list-style-type: none"> ■ 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 	<ul style="list-style-type: none"> ■ 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 	<ul style="list-style-type: none"> ■ continue to edit sentences for empty language, wordiness, and redundancy ■ revise structurally complex sentences to correct vague or ambiguous pronoun references
24–27	Standards	<ul style="list-style-type: none"> ■ 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 	<ul style="list-style-type: none"> ■ Determine the need for conjunctive adverbs or phrases to create subtle logical connections between sentences (e.g., <i>therefore, however, in addition</i>) ■ 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 	<ul style="list-style-type: none"> ■ 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	<ul style="list-style-type: none"> ■ 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 	<ul style="list-style-type: none"> ■ experiment with more subtle organizational structures ■ revise writing by refining introductions, conclusions, and transitions in complex paragraphs 	<ul style="list-style-type: none"> ■ select and manipulate words, phrases, and clauses to convey shades of meaning and tone ■ avoid clutter and use vivid verbs and specific nouns

<i>Sentence Structure and Formation</i>	<i>Conventions of Usage</i>	<i>Conventions of Punctuation</i>
<ul style="list-style-type: none"> ■ Recognize and correct marked disturbances of sentence flow and structure (e.g., participial phrase fragments, missing or incorrect relative pronouns, dangling or misplaced modifiers) 	<ul style="list-style-type: none"> ■ Use idiomatically appropriate prepositions, especially in combination with verbs (e.g., <i>long for</i>, <i>appeal to</i>) ■ Ensure that a verb agrees with its subject when there is some text between the two 	<ul style="list-style-type: none"> ■ 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)
<ul style="list-style-type: none"> ■ revise writing to correct faulty coordination and subordination of clauses ■ revise sentences to correct inconsistencies in verb tense and pronoun person 	<ul style="list-style-type: none"> ■ check to be sure pronouns agree with antecedents in increasingly complex sentences 	<ul style="list-style-type: none"> ■ use punctuation to set off nonessential information in a sentence ■ recognize inappropriate uses of commas
<ul style="list-style-type: none"> ■ 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 	<ul style="list-style-type: none"> ■ 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 <i>have</i> rather than <i>of</i> 	<ul style="list-style-type: none"> ■ 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 compound verb joined by <i>and</i>) ■ Use apostrophes to indicate simple possessive nouns ■ Recognize inappropriate uses of colons and semicolons
<ul style="list-style-type: none"> ■ use sentence-combining techniques to create more sophisticated sentences; check to avoid fragments, comma splices, and run-ons 	<ul style="list-style-type: none"> ■ recognize the difference between <i>its</i> and <i>it's</i>, <i>your</i> and <i>you're</i>, <i>who</i> and <i>whom</i> 	<ul style="list-style-type: none"> ■ use commas to set off nonessential appositives or clauses ■ use semicolons to indicate relationships between independent clauses

ENGLISH
(continued)

COLLEGE READINESS STANDARDS

Score Range		<i>Topic Development in Terms of Purpose and Focus</i>	<i>Organization, Unity, and Coherence</i>	<i>Word Choice in Terms of Style, Tone, Clarity, and Economy</i>
28–32*	Standards	<ul style="list-style-type: none"> ■ 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 	<ul style="list-style-type: none"> ■ 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 	<ul style="list-style-type: none"> ■ 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	<ul style="list-style-type: none"> ■ 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 	<ul style="list-style-type: none"> ■ 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 	<ul style="list-style-type: none"> ■ revise writing to delete redundancies in terms of the paragraph as a whole
33–36†	Standards	<ul style="list-style-type: none"> ■ Determine whether a complex essay has accomplished a specific purpose ■ Add a phrase or sentence to accomplish a complex purpose, often expressed in terms of the main focus of the essay 	<ul style="list-style-type: none"> ■ Consider the need for introductory sentences or transitions, basing decisions on a thorough understanding of both the logic and rhetorical effect of the paragraph and essay 	<ul style="list-style-type: none"> ■ Delete redundant material that involves subtle concepts or that is redundant in terms of the paragraph as a whole

* PLAN and ACT only
† ACT only

<i>Sentence Structure and Formation</i>	<i>Conventions of Usage</i>	<i>Conventions of Punctuation</i>
<ul style="list-style-type: none"> ■ 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 	<ul style="list-style-type: none"> ■ Correctly use reflexive pronouns, the possessive pronouns <i>its</i> and <i>your</i>, and the relative pronouns <i>who</i> and <i>whom</i> ■ 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) 	<ul style="list-style-type: none"> ■ 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
<ul style="list-style-type: none"> ■ maintain parallel structure between phrases and clauses in a complex sentence ■ employ a variety of sentence structures in their writing 	<ul style="list-style-type: none"> ■ revise sentences to ensure agreement between verb and subject when a phrase between the two suggests a different number for the verb 	<ul style="list-style-type: none"> ■ use the colon to introduce an example or an elaboration
<ul style="list-style-type: none"> ■ Work comfortably with long sentences and complex clausal relationships within sentences, avoiding weak conjunctions between independent clauses and maintaining parallel structure between clauses 	<ul style="list-style-type: none"> ■ Provide idiomatically and contextually appropriate prepositions following verbs in situations involving sophisticated language or ideas ■ Ensure that a verb agrees with its subject when a phrase or clause between the two suggests a different number for the verb 	<ul style="list-style-type: none"> ■ Use a colon to introduce an example or an elaboration

MATHEMATICS

COLLEGE READINESS STANDARDS

Score Range		<i>Basic Operations & Applications</i>	<i>Probability, Statistics, & Data Analysis</i>	<i>Numbers: Concepts & Properties</i>
1–12	Standards	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> 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) 	<ul style="list-style-type: none"> Calculate the average of a list of positive whole numbers Perform a single computation using information from a table or chart 	<ul style="list-style-type: none"> Recognize equivalent fractions and fractions in lowest terms
	ideas for progress	<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> recognize and apply place value, rounding, and elementary number theory concepts

†ACT only

<i>Expressions, Equations, & Inequalities</i>	<i>Graphical Representations</i>	<i>Properties of Plane Figures</i>	<i>Measurement</i>	<i>Functions†</i>
<ul style="list-style-type: none"> ■ 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 	<ul style="list-style-type: none"> ■ locate and describe points in terms of their position on the number line 		<ul style="list-style-type: none"> ■ identify line segments in geometric figures and estimate or calculate their measure 	
<ul style="list-style-type: none"> ■ 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 	<ul style="list-style-type: none"> ■ Identify the location of a point with a positive coordinate on the number line 		<ul style="list-style-type: none"> ■ Estimate or calculate the length of a line segment based on other lengths given on a geometric figure 	
<ul style="list-style-type: none"> ■ 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 	<ul style="list-style-type: none"> ■ locate and describe objects in terms of their position on the number line and on a grid 	<ul style="list-style-type: none"> ■ describe, compare, and contrast plane and solid figures using their attributes 	<ul style="list-style-type: none"> ■ distinguish between area and perimeter, and find the area or perimeter when all relevant dimensions are given 	<ul style="list-style-type: none"> ■ recognize functions as mappings of an independent variable into a dependent variable†

COLLEGE READINESS STANDARDS

Score Range		<i>Basic Operations & Applications</i>	<i>Probability, Statistics, & Data Analysis</i>	<i>Numbers: Concepts & Properties</i>
16–19	Standards	<ul style="list-style-type: none"> ■ Solve routine one-step arithmetic problems (using whole numbers, fractions, and decimals) such as single-step percent ■ Solve some routine two-step arithmetic problems 	<ul style="list-style-type: none"> ■ 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 	<ul style="list-style-type: none"> ■ Recognize one-digit factors of a number ■ Identify a digit's place value
	ideas for progress	<ul style="list-style-type: none"> ■ 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 	<ul style="list-style-type: none"> ■ 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 	<ul style="list-style-type: none"> ■ 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	<ul style="list-style-type: none"> ■ 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 	<ul style="list-style-type: none"> ■ 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* 	<ul style="list-style-type: none"> ■ Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor
	ideas for progress	<ul style="list-style-type: none"> ■ 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 	<ul style="list-style-type: none"> ■ construct and analyze Venn diagrams to help determine simple probabilities 	<ul style="list-style-type: none"> ■ use the inverse relationships for the four basic operations, exponentiation, and root extractions to determine unknown quantities ■ perform basic operations with complex numbers†

* PLAN and ACT only
† ACT only

<i>Expressions, Equations, & Inequalities</i>	<i>Graphical Representations</i>	<i>Properties of Plane Figures</i>	<i>Measurement</i>	<i>Functions†</i>
<ul style="list-style-type: none"> ■ Substitute whole numbers for unknown quantities to evaluate expressions ■ Solve one-step equations having integer or decimal answers ■ Combine like terms (e.g., $2x + 5x$) 	<ul style="list-style-type: none"> ■ Locate points on the number line and in the first quadrant 	<ul style="list-style-type: none"> ■ Exhibit some knowledge of the angles associated with parallel lines 	<ul style="list-style-type: none"> ■ Compute the perimeter of polygons when all side lengths are given ■ Compute the area of rectangles when whole number dimensions are given 	
<ul style="list-style-type: none"> ■ create expressions that model mathematical situations using combinations of symbols and numbers ■ evaluate algebraic expressions and solve multistep first-degree equations 	<ul style="list-style-type: none"> ■ sketch and identify line segments, midpoints, intersections, and vertical and horizontal lines 	<ul style="list-style-type: none"> ■ describe angles and triangles using mathematical terminology and apply their properties 	<ul style="list-style-type: none"> ■ find area and perimeter of a variety of polygons by substituting given values into standard geometric formulas 	<ul style="list-style-type: none"> ■ evaluate polynomial functions that use function notation† ■ distinguish between range and domain†
<ul style="list-style-type: none"> ■ 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* 	<ul style="list-style-type: none"> ■ Locate points in the coordinate plane ■ Comprehend the concept of length on the number line* ■ Exhibit knowledge of slope* 	<ul style="list-style-type: none"> ■ 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°) 	<ul style="list-style-type: none"> ■ Compute the area and perimeter of triangles and rectangles in simple problems ■ Use geometric formulas when all necessary information is given 	<ul style="list-style-type: none"> ■ Evaluate quadratic functions, expressed in function notation, at integer values†
<ul style="list-style-type: none"> ■ 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 	<ul style="list-style-type: none"> ■ 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) 	<ul style="list-style-type: none"> ■ 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 	<ul style="list-style-type: none"> ■ apply a variety of strategies to determine the circumference or perimeter and the area for circles, triangles, rectangles, and composite geometric figures 	<ul style="list-style-type: none"> ■ identify the basic trigonometric ratios†

MATHEMATICS
(continued)

COLLEGE READINESS STANDARDS

Score Range		<i>Basic Operations & Applications</i>	<i>Probability, Statistics, & Data Analysis</i>	<i>Numbers: Concepts & Properties</i>
24–27	Standards	<ul style="list-style-type: none"> ■ Solve multistep arithmetic problems that involve planning or converting units of measure (e.g., feet per second to miles per hour) 	<ul style="list-style-type: none"> ■ 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* 	<ul style="list-style-type: none"> ■ 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* ■ Exhibit some knowledge of the complex numbers†
	ideas for progress	<ul style="list-style-type: none"> ■ model and solve real-world problems that involve a combination of rates, proportions, and/or percents 	<ul style="list-style-type: none"> ■ find the probability of simple events, disjoint events, compound events, and independent events in a variety of settings using a variety of counting techniques 	<ul style="list-style-type: none"> ■ apply and use elementary number concepts and number properties to model and solve nonroutine problems that involve new ideas

* PLAN and ACT only

† ACT only

<i>Expressions, Equations, & Inequalities</i>	<i>Graphical Representations</i>	<i>Properties of Plane Figures</i>	<i>Measurement</i>	<i>Functions†</i>
<ul style="list-style-type: none"> ■ 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* 	<ul style="list-style-type: none"> ■ 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* 	<ul style="list-style-type: none"> ■ Use several angle properties to find an unknown angle measure ■ Recognize Pythagorean triples* ■ Use properties of isosceles triangles* 	<ul style="list-style-type: none"> ■ 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* 	<ul style="list-style-type: none"> ■ Evaluate polynomial functions, expressed in function notation, at integer values† ■ Express the sine, cosine, and tangent of an angle in a right triangle as a ratio of given side lengths†
<ul style="list-style-type: none"> ■ 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) 	<ul style="list-style-type: none"> ■ 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 	<ul style="list-style-type: none"> ■ apply special right-triangle properties and the Pythagorean theorem to solve congruent and similar shape problems 	<ul style="list-style-type: none"> ■ apply a variety of strategies using relationships between perimeter, area, and volume to calculate desired measures 	<ul style="list-style-type: none"> ■ write an expression for and evaluate composite functions† ■ use basic trigonometric ratios to solve problems involving indirect measurement†

MATHEMATICS
(continued)

COLLEGE READINESS STANDARDS

Score Range		<i>Basic Operations & Applications</i>	<i>Probability, Statistics, & Data Analysis</i>	<i>Numbers: Concepts & Properties</i>
28–32*	Standards	<ul style="list-style-type: none"> ■ Solve word problems containing several rates, proportions, or percentages 	<ul style="list-style-type: none"> ■ 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 	<ul style="list-style-type: none"> ■ 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 ■ Multiply two complex numbers†
	ideas for progress	<ul style="list-style-type: none"> ■ solve problems that require combining multiple concepts 	<ul style="list-style-type: none"> ■ design and conduct probability investigations (e.g., how the margin of error is determined) and then determine, analyze, and communicate the results 	<ul style="list-style-type: none"> ■ explain, solve, and/or draw conclusions for complex problems using relationships and elementary number concepts
33–36†	Standards	<ul style="list-style-type: none"> ■ solve complex arithmetic problems involving percent of increase or decrease and problems requiring integration of several concepts from pre-algebra and/or pre-geometry (e.g., comparing percentages or averages, using several ratios, and finding ratios in geometry settings) 	<ul style="list-style-type: none"> ■ distinguish between mean, median, and mode for a list of numbers ■ analyze and draw conclusions based on information from figures, tables, and graphs ■ exhibit knowledge of conditional and joint probability 	<ul style="list-style-type: none"> ■ draw conclusions based on number concepts, algebraic properties, and/or relationships between expressions and numbers ■ exhibit knowledge of logarithms and geometric sequences ■ apply properties of complex numbers

* PLAN and ACT only

† ACT only

Expressions, Equations, & Inequalities	Graphical Representations	Properties of Plane Figures	Measurement	Functions†
<ul style="list-style-type: none"> ■ 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 	<ul style="list-style-type: none"> ■ 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 ■ Recognize special characteristics of parabolas and circles (e.g., the vertex of a parabola and the center or radius of a circle)† 	<ul style="list-style-type: none"> ■ Apply properties of 30°-60°-90°, 45°-45°-90°, similar, and congruent triangles ■ Use the Pythagorean theorem 	<ul style="list-style-type: none"> ■ Use relationships involving area, perimeter, and volume of geometric figures to compute another measure 	<ul style="list-style-type: none"> ■ Evaluate composite functions at integer values† ■ Apply basic trigonometric ratios to solve right-triangle problems†
<ul style="list-style-type: none"> ■ formulate expressions, equations, and inequalities that require planning to accurately model real-world problems (e.g., direct and inverse variation) 	<ul style="list-style-type: none"> ■ solve and graph quadratic inequalities 	<ul style="list-style-type: none"> ■ 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 	<ul style="list-style-type: none"> ■ examine and compare a variety of methods to find areas of composite figures and construct scale drawings 	<ul style="list-style-type: none"> ■ explore geometric models where unit circle trigonometry and basic identities can be used to solve problems†
<ul style="list-style-type: none"> ■ Write expressions that require planning and/or manipulating to accurately model a situation ■ Write equations and inequalities that require planning, manipulating, and/or solving ■ Solve simple absolute value inequalities 	<ul style="list-style-type: none"> ■ Match number line graphs with solution sets of simple quadratic inequalities ■ Identify characteristics of graphs based on a set of conditions or on a general equation such as $y = ax^2 + c$ ■ Solve problems integrating multiple algebraic and/or geometric concepts ■ Analyze and draw conclusions based on information from graphs in the coordinate plane 	<ul style="list-style-type: none"> ■ Draw conclusions based on a set of conditions ■ Solve multistep geometry problems that involve integrating concepts, planning, visualization, and/or making connections with other content areas ■ Use relationships among angles, arcs, and distances in a circle 	<ul style="list-style-type: none"> ■ Use scale factors to determine the magnitude of a size change ■ Compute the area of composite geometric figures when planning or visualization is required 	<ul style="list-style-type: none"> ■ Write an expression for the composite of two simple functions† ■ Use trigonometric concepts and basic identities to solve problems† ■ Exhibit knowledge of unit circle trigonometry† ■ Match graphs of basic trigonometric functions with their equations†

READING

COLLEGE READINESS STANDARDS

Score Range		Main Ideas and Author's Approach	Supporting Details
1–12	Standards	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> Recognize a clear intent of an author or narrator in uncomplicated literary narratives 	<ul style="list-style-type: none"> Locate basic facts (e.g., names, dates, events) clearly stated in a passage
	ideas for progress	<ul style="list-style-type: none"> work with peers to create logical statements about the main idea or purpose of simple paragraphs 	<ul style="list-style-type: none"> 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 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.

<i>Sequential, Comparative, and Cause-Effect Relationships</i>	<i>Meanings of Words</i>	<i>Generalizations and Conclusions</i>
<ul style="list-style-type: none"> ■ 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 	<ul style="list-style-type: none"> ■ use various resources (e.g., dictionary, thesaurus) to explore connotations of familiar words or descriptive language 	<ul style="list-style-type: none"> ■ 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
<ul style="list-style-type: none"> ■ 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 	<ul style="list-style-type: none"> ■ Understand the implication of a familiar word or phrase and of simple descriptive language 	<ul style="list-style-type: none"> ■ Draw simple generalizations and conclusions about the main characters in uncomplicated literary narratives
<ul style="list-style-type: none"> ■ 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 	<ul style="list-style-type: none"> ■ examine specific language in a text and propose plausible interpretations based in part on their own viewpoints and experiences 	<ul style="list-style-type: none"> ■ analyze the reasonableness of generalizations by reviewing information presented in the text and from other sources ■ compose generalizations that include qualifying language (e.g., <i>a few</i>, <i>sometimes</i>) 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.

READING
(continued)

COLLEGE READINESS STANDARDS

Score Range		<i>Main Ideas and Author's Approach</i>	<i>Supporting Details</i>
16–19	Standards	<ul style="list-style-type: none"> ■ Identify a clear main idea or purpose of straightforward paragraphs in uncomplicated literary narratives 	<ul style="list-style-type: none"> ■ 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	<ul style="list-style-type: none"> ■ analyze techniques used by the author of a text to reveal or conceal his or her point of view 	<ul style="list-style-type: none"> ■ 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	<ul style="list-style-type: none"> ■ 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 	<ul style="list-style-type: none"> ■ Locate important details in uncomplicated passages ■ Make simple inferences about how details are used in passages
	ideas for progress	<ul style="list-style-type: none"> ■ 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) 	<ul style="list-style-type: none"> ■ 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

<i>Sequential, Comparative, and Cause-Effect Relationships</i>	<i>Meanings of Words</i>	<i>Generalizations and Conclusions</i>
<ul style="list-style-type: none"> ■ Identify relationships between main characters in uncomplicated literary narratives ■ Recognize clear cause-effect relationships within a single paragraph in uncomplicated literary narratives 	<ul style="list-style-type: none"> ■ Use context to understand basic figurative language 	<ul style="list-style-type: none"> ■ Draw simple generalizations and conclusions about people, ideas, and so on in uncomplicated passages
<ul style="list-style-type: none"> ■ 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 effects 	<ul style="list-style-type: none"> ■ clarify the meanings of words or descriptive phrases by searching for clues in the text (e.g., sentence structure, context, prefixes/suffixes, spelling patterns) 	<ul style="list-style-type: none"> ■ 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
<ul style="list-style-type: none"> ■ 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 	<ul style="list-style-type: none"> ■ Use context to determine the appropriate meaning of some figurative and nonfigurative words, phrases, and statements in uncomplicated passages 	<ul style="list-style-type: none"> ■ 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
<ul style="list-style-type: none"> ■ 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) 	<ul style="list-style-type: none"> ■ 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 	<ul style="list-style-type: none"> ■ 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

READING
(continued)

COLLEGE READINESS STANDARDS

Score Range		<i>Main Ideas and Author's Approach</i>	<i>Supporting Details</i>
24–27	Standards	<ul style="list-style-type: none"> ■ 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 	<ul style="list-style-type: none"> ■ 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	<ul style="list-style-type: none"> ■ 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) 	<ul style="list-style-type: none"> ■ 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

<i>Sequential, Comparative, and Cause-Effect Relationships</i>	<i>Meanings of Words</i>	<i>Generalizations and Conclusions</i>
<ul style="list-style-type: none"> ■ 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 	<ul style="list-style-type: none"> ■ 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 	<ul style="list-style-type: none"> ■ 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
<ul style="list-style-type: none"> ■ 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 	<ul style="list-style-type: none"> ■ 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 	<ul style="list-style-type: none"> ■ 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

READING
(continued)

COLLEGE READINESS STANDARDS

Score Range		<i>Main Ideas and Author's Approach</i>	<i>Supporting Details</i>
28–32*	Standards	<ul style="list-style-type: none"> ■ 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 	<ul style="list-style-type: none"> ■ 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	<ul style="list-style-type: none"> ■ locate and analyze ideas in a complex 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 	<ul style="list-style-type: none"> ■ identify facts embedded in complex informational texts
33–36†	Standards	<ul style="list-style-type: none"> ■ Identify clear main ideas or purposes of complex passages or their paragraphs 	<ul style="list-style-type: none"> ■ Locate and interpret details in complex passages ■ Understand the function of a part of a passage when the function is subtle or complex

* PLAN and ACT only

† ACT only

<i>Sequential, Comparative, and Cause-Effect Relationships</i>	<i>Meanings of Words</i>	<i>Generalizations and Conclusions</i>
<ul style="list-style-type: none"> ■ 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 	<ul style="list-style-type: none"> ■ Determine the appropriate meaning of words, phrases, or statements from figurative or somewhat technical contexts 	<ul style="list-style-type: none"> ■ Use information from one or more sections of a more challenging passage to draw generalizations and conclusions about people, ideas, and so on
<ul style="list-style-type: none"> ■ 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 	<ul style="list-style-type: none"> ■ employ strategies for defining a difficult concept, such as identifying its characteristics or providing examples of what it is and is not like 	<ul style="list-style-type: none"> ■ 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
<ul style="list-style-type: none"> ■ Order sequences of events in complex passages ■ Understand the subtleties in relationships between people, ideas, and so on in virtually any passage ■ Understand implied, subtle, or complex cause-effect relationships in virtually any passage 	<ul style="list-style-type: none"> ■ Determine, even when the language is richly figurative and the vocabulary is difficult, the appropriate meaning of context-dependent words, phrases, or statements in virtually any passage 	<ul style="list-style-type: none"> ■ Draw complex or subtle generalizations and conclusions about people, ideas, and so on, often by synthesizing information from different portions of the passage ■ Understand and generalize about portions of a complex literary narrative

SCIENCE

COLLEGE READINESS STANDARDS

Score Range		<i>Interpretation of Data</i>	<i>Scientific Investigation</i>	<i>Evaluation of Models, Inferences, and Experimental Results</i>
1–12	Standards	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> locate data in simple tables and graphs become familiar with different types of graphs (e.g., line graphs, pie charts, bar graphs) become familiar with units of measurement commonly used in science 	<ul style="list-style-type: none"> observe experiments being performed and discuss what was done and why 	<ul style="list-style-type: none"> discuss what hypotheses and conclusions are and how they are different from each other
13–15	Standards	<ul style="list-style-type: none"> Select a single piece of data (numerical or nonnumerical) from a simple data presentation (e.g., a table or graph with two or three variables; a food web diagram) Identify basic features of a table, graph, or diagram (e.g., headings, units of measurement, axis labels) 		
	ideas for progress	<ul style="list-style-type: none"> locate several data points in a simple table or graph and make comparisons between them become familiar with common terms used in science (e.g., <i>star</i>, <i>force</i>, <i>mineral</i>) create basic tables and graphs from sets of scientific data read newspaper and magazine articles pertaining to science and technology and discuss main points with peers describe trends and relationships in data displayed in simple tables and graphs 	<ul style="list-style-type: none"> determine an appropriate method for performing a simple experiment perform simple laboratory activities designed to teach familiarity with a number of commonly used tools (e.g., thermometers, balances, glassware) 	<ul style="list-style-type: none"> read science articles of an appropriate level from newspapers and science newsmagazines and identify any hypotheses or conclusions made by the author(s)

SCIENCE
(continued)

COLLEGE READINESS STANDARDS

Score Range		<i>Interpretation of Data</i>	<i>Scientific Investigation</i>	<i>Evaluation of Models, Inferences, and Experimental Results</i>
16–19	Standards	<ul style="list-style-type: none"> ■ Select two or more pieces of data from a simple data presentation ■ Understand basic scientific terminology ■ Find basic information in a brief body of text ■ Determine how the value of one variable changes as the value of another variable changes in a simple data presentation 	<ul style="list-style-type: none"> ■ Understand the methods and tools used in a simple experiment 	
	ideas for progress	<ul style="list-style-type: none"> ■ display data gathered in laboratory exercises in a variety of formats (e.g., line graphs, pie charts, bar graphs) 	<ul style="list-style-type: none"> ■ perform experiments that require more than one step ■ conduct a simple experiment that makes use of a control group 	<ul style="list-style-type: none"> ■ read descriptions of actual experiments (e.g., completed science fair research, simple experiments from science education journals) and discuss whether the conclusions that were made support or contradict the hypotheses ■ formulate hypotheses, predictions, or conclusions based on the results of an experiment
20–23	Standards	<ul style="list-style-type: none"> ■ Select data from a complex data presentation (e.g., a table or graph with more than three variables; a phase diagram) ■ Compare or combine data from a simple data presentation (e.g., order or sum data from a table) ■ Translate information into a table, graph, or diagram 	<ul style="list-style-type: none"> ■ Understand the methods and tools used in a moderately complex experiment ■ Understand a simple experimental design ■ Identify a control in an experiment ■ Identify similarities and differences between experiments 	<ul style="list-style-type: none"> ■ Select a simple hypothesis, prediction, or conclusion that is supported by a data presentation or a model ■ Identify key issues or assumptions in a model
	ideas for progress	<ul style="list-style-type: none"> ■ examine line graphs to determine if they show a direct or inverse relationship between variables ■ become familiar with scatterplots ■ determine a simple mathematical relationship between two variables ■ integrate scientific information from popular sources (e.g., newspapers, magazines, the Internet) with that found in textbooks 	<ul style="list-style-type: none"> ■ perform several repetitions of an experiment to determine the reliability of results 	<ul style="list-style-type: none"> ■ evaluate whether the data produced by an experiment adequately support a given conclusion ■ compare and contrast two different models about a scientific phenomenon

SCIENCE
(continued)

COLLEGE READINESS STANDARDS

Score Range		<i>Interpretation of Data</i>	<i>Scientific Investigation</i>	<i>Evaluation of Models, Inferences, and Experimental Results</i>
24–27	Standards	<ul style="list-style-type: none"> ■ Compare or combine data from two or more simple data presentations (e.g., categorize data from a table using a scale from another table) ■ Compare or combine data from a complex data presentation ■ Interpolate between data points in a table or graph ■ Determine how the value of one variable changes as the value of another variable changes in a complex data presentation ■ Identify and/or use a simple (e.g., linear) mathematical relationship between data ■ Analyze given information when presented with new, simple information 	<ul style="list-style-type: none"> ■ Understand the methods and tools used in a complex experiment ■ Understand a complex experimental design ■ Predict the results of an additional trial or measurement in an experiment ■ Determine the experimental conditions that would produce specified results 	<ul style="list-style-type: none"> ■ Select a simple hypothesis, prediction, or conclusion that is supported by two or more data presentations or models ■ Determine whether given information supports or contradicts a simple hypothesis or conclusion, and why ■ Identify strengths and weaknesses in one or more models ■ Identify similarities and differences between models ■ Determine which model(s) is(are) supported or weakened by new information ■ Select a data presentation or a model that supports or contradicts a hypothesis, prediction, or conclusion
	ideas for progress	<ul style="list-style-type: none"> ■ relate scientific information contained in written text to numerical data ■ manipulate algebraic equations that represent data 	<ul style="list-style-type: none"> ■ determine the hypothesis behind an experiment that requires more than one step ■ determine alternate methods of testing a hypothesis 	<ul style="list-style-type: none"> ■ communicate findings of an experiment and compare conclusions with those of peers
28–32*	Standards	<ul style="list-style-type: none"> ■ Compare or combine data from a simple data presentation with data from a complex data presentation ■ Identify and/or use a complex (e.g., nonlinear) mathematical relationship between data ■ Extrapolate from data points in a table or graph 	<ul style="list-style-type: none"> ■ Determine the hypothesis for an experiment ■ Identify an alternate method for testing a hypothesis 	<ul style="list-style-type: none"> ■ Select a complex hypothesis, prediction, or conclusion that is supported by a data presentation or model ■ Determine whether new information supports or weakens a model, and why ■ Use new information to make a prediction based on a model
	ideas for progress	<ul style="list-style-type: none"> ■ examine two or more related sets of data and then combine those data in ways that are useful 	<ul style="list-style-type: none"> ■ carry out scientific investigations in which the importance of accuracy and precision is stressed ■ consider how changing an experimental procedure will affect the results of their scientific investigations ■ design and carry out additional scientific inquiries to answer specific questions 	<ul style="list-style-type: none"> ■ formulate hypotheses, predictions, or conclusions by comparing and contrasting several different sets of data from different experiments ■ evaluate the merits of a conclusion based on the analysis of several sets of data ■ seek out new information that enhances or challenges their existing knowledge

* PLAN and ACT only

SCIENCE
(continued)

COLLEGE READINESS STANDARDS

Score Range		<i>Interpretation of Data</i>	<i>Scientific Investigation</i>	<i>Evaluation of Models, Inferences, and Experimental Results</i>
33–36†	Standards	<ul style="list-style-type: none"> ■ Compare or combine data from two or more complex data presentations ■ Analyze given information when presented with new, complex information 	<ul style="list-style-type: none"> ■ Understand precision and accuracy issues ■ Predict how modifying the design or methods of an experiment will affect results ■ Identify an additional trial or experiment that could be performed to enhance or evaluate experimental results 	<ul style="list-style-type: none"> ■ Select a complex hypothesis, prediction, or conclusion that is supported by two or more data presentations or models ■ Determine whether given information supports or contradicts a complex hypothesis or conclusion, and why

† ACT only

Science College Readiness Standards are measured in the context of science topics students encounter in science courses. These topics may include:

Life Science/Biology	Physical Science/Chemistry, Physics	Earth & Space Science
<ul style="list-style-type: none"> • Animal behavior • Animal development and growth • Body systems • Cell structure and processes • Ecology • Evolution • Genetics • Homeostasis • Life cycles • Molecular basis of heredity • Origin of life • Photosynthesis • Plant development, growth, structure • Populations • Taxonomy 	<ul style="list-style-type: none"> • Atomic structure • Chemical bonding, equations, nomenclature, reactions • Electrical circuits • Elements, compounds, mixtures • Force and motions • Gravitation • Heat and work • Kinetic and potential energy • Magnetism • Momentum • The Periodic Table • Properties of solutions • Sound and light • States, classes, and properties of matter • Waves 	<ul style="list-style-type: none"> • Earthquakes and volcanoes • Earth's atmosphere • Earth's resources • Fossils and geological time • Geochemical cycles • Groundwater • Lakes, rivers, oceans • Mass movements • Plate tectonics • Rocks, minerals • Solar system • Stars, galaxies, and the universe • Water cycle • Weather and climate • Weathering and erosion

COLLEGE READINESS STANDARDS

Score Range	<i>Expressing Judgments</i>	<i>Focusing on the Topic</i>	<i>Developing a Position</i>
3‡–4	<ul style="list-style-type: none"> ■ Show a little understanding of the persuasive purpose of the task but neglect to take or to maintain a position on the issue in the prompt ■ Show limited recognition of the complexity of the issue in the prompt 	<ul style="list-style-type: none"> ■ Maintain a focus on the general topic in the prompt through most of the essay 	<ul style="list-style-type: none"> ■ Offer a little development, with one or two ideas; if examples are given, they are general and may not be clearly relevant; resort often to merely repeating ideas ■ Show little or no movement between general and specific ideas and examples
5–6	<ul style="list-style-type: none"> ■ Show a basic understanding of the persuasive purpose of the task by taking a position on the issue in the prompt but may not maintain that position ■ Show a little recognition of the complexity of the issue in the prompt by acknowledging, but only briefly describing, a counterargument to the writer's position 	<ul style="list-style-type: none"> ■ Maintain a focus on the general topic in the prompt throughout the essay 	<ul style="list-style-type: none"> ■ Offer limited development of ideas using a few general examples; resort sometimes to merely repeating ideas ■ Show little movement between general and specific ideas and examples
7–8	<ul style="list-style-type: none"> ■ Show understanding of the persuasive purpose of the task by taking a position on the issue in the prompt ■ Show some recognition of the complexity of the issue in the prompt by <ul style="list-style-type: none"> • acknowledging counterarguments to the writer's position • providing some response to counterarguments to the writer's position 	<ul style="list-style-type: none"> ■ Maintain a focus on the general topic in the prompt throughout the essay and attempt a focus on the specific issue in the prompt ■ Present a thesis that establishes focus on the topic 	<ul style="list-style-type: none"> ■ Develop ideas by using some specific reasons, details, and examples ■ Show some movement between general and specific ideas and examples
9–10	<ul style="list-style-type: none"> ■ Show clear understanding of the persuasive purpose of the task by taking a position on the specific issue in the prompt and offering a broad context for discussion ■ Show recognition of the complexity of the issue in the prompt by <ul style="list-style-type: none"> • partially evaluating implications and/or complications of the issue, and/or • posing and partially responding to counterarguments to the writer's position 	<ul style="list-style-type: none"> ■ Maintain a focus on discussion of the specific topic and issue in the prompt throughout the essay ■ Present a thesis that establishes a focus on the writer's position on the issue 	<ul style="list-style-type: none"> ■ Develop most ideas fully, using some specific and relevant reasons, details, and examples ■ Show clear movement between general and specific ideas and examples
11–12	<ul style="list-style-type: none"> ■ Show clear understanding of the persuasive purpose of the task by taking a position on the specific issue in the prompt and offering a critical context for discussion ■ Show understanding of the complexity of the issue in the prompt by <ul style="list-style-type: none"> • examining different perspectives, and/or • evaluating implications or complications of the issue, and/or • posing and fully discussing counterarguments to the writer's position 	<ul style="list-style-type: none"> ■ Maintain a clear focus on discussion of the specific topic and issue in the prompt throughout the essay ■ Present a critical thesis that clearly establishes the focus on the writer's position on the issue 	<ul style="list-style-type: none"> ■ Develop several ideas fully, using specific and relevant reasons, details, and examples ■ Show effective movement between general and specific ideas and examples

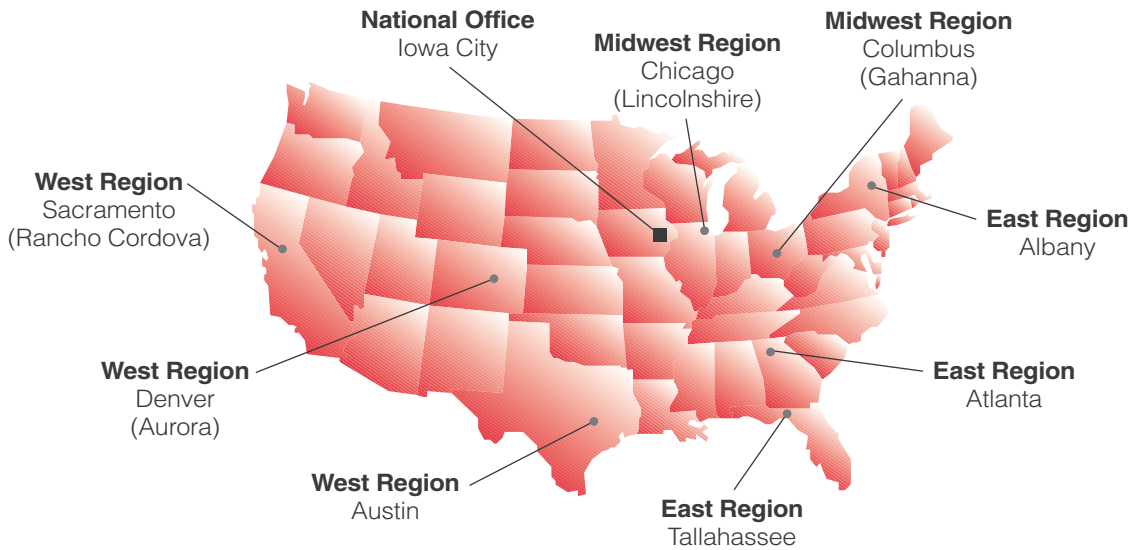
† ACT only

‡ Scores below 3 do not permit useful generalizations about students' writing skills.

Organizing Ideas	Using Language
<ul style="list-style-type: none"> ■ Provide a discernible organization with some logical grouping of ideas in parts of the essay ■ Use a few simple and obvious transitions ■ Present a discernible, though minimally developed, introduction and conclusion 	<ul style="list-style-type: none"> ■ Show limited control of language by <ul style="list-style-type: none"> • correctly employing some of the conventions of standard English grammar, usage, and mechanics, but with distracting errors that sometimes significantly impede understanding • using simple vocabulary • using simple sentence structure
<ul style="list-style-type: none"> ■ Provide a simple organization with logical grouping of ideas in parts of the essay ■ Use some simple and obvious transitional words, though they may at times be inappropriate or misleading ■ Present a discernible, though underdeveloped, introduction and conclusion 	<ul style="list-style-type: none"> ■ Show a basic control of language by <ul style="list-style-type: none"> • correctly employing some of the conventions of standard English grammar, usage, and mechanics, but with distracting errors that sometimes impede understanding • using simple but appropriate vocabulary • using a little sentence variety, though most sentences are simple in structure
<ul style="list-style-type: none"> ■ Provide an adequate but simple organization with logical grouping of ideas in parts of the essay but with little evidence of logical progression of ideas ■ Use some simple and obvious, but appropriate, transitional words and phrases ■ Present a discernible introduction and conclusion with a little development 	<ul style="list-style-type: none"> ■ Show adequate use of language to communicate by <ul style="list-style-type: none"> • correctly employing many of the conventions of standard English grammar, usage, and mechanics, but with some distracting errors that may occasionally impede understanding • using appropriate vocabulary • using some varied kinds of sentence structures to vary pace
<ul style="list-style-type: none"> ■ Provide unity and coherence throughout the essay, sometimes with a logical progression of ideas ■ Use relevant, though at times simple and obvious, transitional words and phrases to convey logical relationships between ideas ■ Present a somewhat developed introduction and conclusion 	<ul style="list-style-type: none"> ■ Show competent use of language to communicate ideas by <ul style="list-style-type: none"> • correctly employing most conventions of standard English grammar, usage, and mechanics, with a few distracting errors but none that impede understanding • using some precise and varied vocabulary • using several kinds of sentence structures to vary pace and to support meaning
<ul style="list-style-type: none"> ■ Provide unity and coherence throughout the essay, often with a logical progression of ideas ■ Use relevant transitional words, phrases, and sentences to convey logical relationships between ideas ■ Present a well-developed introduction and conclusion 	<ul style="list-style-type: none"> ■ Show effective use of language to clearly communicate ideas by <ul style="list-style-type: none"> • correctly employing most conventions of standard English grammar, usage, and mechanics, with just a few, if any, errors • using precise and varied vocabulary • using a variety of kinds of sentence structures to vary pace and to support meaning

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