

# EXPLORE<sup>®</sup>

## SAMPLE TEST QUESTIONS

MATCHED TO

## EXPLORE COLLEGE READINESS STANDARDS

### Contents

This booklet provides a match between the College Readiness Standards and each test question from all four content areas of the Abbreviated Test Booklet for EXPLORE:

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# Introduction

This booklet—called Sample Test Questions Matched to EXPLORE College Readiness Standards—has been provided to show you how all of the questions in the EXPLORE Abbreviated Test Booklet are matched to ACT’s College Readiness Standards.

The College Readiness Standards that you see on the left-hand side of each page of this booklet are numbered so that you can find them on the College Readiness Standards table provided. The test questions that appear on the right-hand side of the page can be found, with complete passages for English, Reading, and Science, in the EXPLORE Abbreviated Test Booklet.

The College Readiness Standards communicate educational expectations. Each Standard describes what students who score in the designated range are *likely* to be able to do with what they know. The College Readiness Standards Information Services provide information for each testing program: EXPLORE®, PLAN®, and the ACT. Each basic Information Services report package includes:

- Five reports—one each for English, Mathematics, Reading, and Science, plus a summary profile
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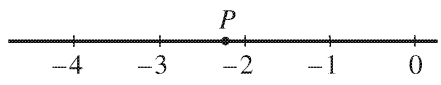
**EXPLORE English:**  
Match Between College Readiness Standards and Test Questions

<b>EXPLORE English College Readiness Standards</b>	<b>EXPLORE Sample Test Question</b>
<p><b>Sentence Structure and Formation, 13–15</b> 202. Revise shifts in verb tense between simple clauses in a sentence or between simple adjoining sentences</p>	<p><i>The stream becomes a river and <u>twisted</u> across a semi-arid plateau.</i></p> <p>1. A. NO CHANGE B. has twisted *C. twists D. twisting</p>
<p><b>Organization, Unity, and Coherence, 24–25</b> 502. Rearrange the sentences in a fairly uncomplicated paragraph for the sake of logic</p>	<p>2. For the sake of unity and coherence, Sentence 6 should be placed:</p> <p>F. where it is now. G. before Sentence 2. H. before Sentence 3. *J. before Sentence 4.</p>
<p><b>Word Choice in Terms of Style, Tone, Clarity, and Economy, 24–25</b> 502. Identify and correct vague pronoun references</p>	<p><i>Although it travels only 550 feet, ducks, geese, mink, squirrels, and quail <u>call</u> home.</i></p> <p>3. A. NO CHANGE B. are *C. call it D. call for</p>
<p><b>Conventions of Usage, 20–23</b> 401. Use idiomatically appropriate prepositions, especially in combination with verbs (e.g., <i>long for</i>, <i>appeal to</i>)</p>	<p><i>And the fish, more <u>than anything else</u>, draw visitors to the Center.</i></p> <p>4. *F. NO CHANGE G. like everything else, H. similar to everything, J. like anything,</p>
<p><b>Conventions of Usage, 16–19</b> 301. 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</p>	<p><i>Fat rainbow trout patrol <u>between</u> territory, chasing smaller fish from prime feeding areas.</i></p> <p>5. A. NO CHANGE *B. their C. his D. in</p>
<p><b>Conventions of Punctuation, 24–25</b> 503. Use apostrophes to indicate simple possessive nouns</p>	<p><i>At the bottom, <u>naturally vacuuming</u> cleaner—the sucker—feeds on algae and waste.</i></p> <p>6. F. NO CHANGE G. nature vacuum H. natures' vacuum *J. nature's vacuum</p>
<p><b>Conventions of Usage, 13–15</b> 201. 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</p>	<p><i>Look <u>more closer</u> for a dark dot in the orange egg.</i></p> <p>7. A. NO CHANGE *B. closely C. most closer D. in closing</p>
<p><b>Sentence Structure and Formation, 24–25</b> 501. Revise to avoid faulty placement of phrases and faulty coordination and subordination of clauses in sentences with subtle structural problems</p>	<p><i>If you come back in two weeks, the dot will be an eye, the egg will have a tail, and <u>a witness for the first</u> . . .</i></p> <p>8. F. NO CHANGE G. then witness *H. you'll have witnessed J. witness</p>



<b>EXPLORE English College Readiness Standards</b>	<b>EXPLORE Sample Test Question</b>
<b>Conventions of Punctuation, 24–25</b> 503. Use apostrophes to indicate simple possessive nouns	. . . <i>the first <u>stages</u> of a trout's life.</i> 9.* <b>A.</b> NO CHANGE <b>B.</b> stage's of a trout's <b>C.</b> stage's of a trout <b>D.</b> stages for a trouts
<b>Topic Development in Terms of Purpose and Focus, 24–25</b> 501. 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	10. The writer has been asked to write an essay that would be part of a brochure on enjoyable things to do and see in Boise, Idaho. Would this essay successfully fulfill that assignment? <b>F.</b> Yes; the essay focuses on mammals, which are apparently of the greatest interest for visitors at the Boise Nature Center. <b>G.</b> Yes; the essay employs a lot of vivid descriptions of animals and fish that visitors to Idaho can see in zoos in cities across the U.S. * <b>H.</b> Yes; the essay provides a concise and informative description of one of Boise's attractive facilities. <b>J.</b> No; the essay does not tell readers how much it costs to go to the Center or how crowded the Center typically is.

**EXPLORE Mathematics:**  
Match Between College Readiness Standards and Test Questions

EXPLORE Mathematics College Readiness Standards	EXPLORE Sample Test Question																		
<p><b>Basic Operations &amp; Applications, 13–15</b></p> <p>201. Perform one-operation computation with whole numbers and decimals</p>	<p>1. What is the remainder when 189,540 is divided by 27 ?</p> <p>*A. 0 B. 7 C. 13 D. 250 E. 7,020</p>																		
<p><b>Probability, Statistics, &amp; Data Analysis, 16–19</b></p> <p>303. Read tables and graphs</p>	<p>2. What is the least expensive shower head on the chart below that will NOT deliver more than 3 gallons of water per minute (gpm)?</p> <p>Information from <i>Consumer Reports</i>, "How to Save Water." ©1990 by Consumers Union of U.S., Inc.</p> <table border="1" data-bbox="860 672 1485 861"> <thead> <tr> <th>Brand and Model</th> <th>Price</th> <th>Maximum gpm</th> </tr> </thead> <tbody> <tr> <td>F. Sears 20173</td> <td>\$23</td> <td>3.4</td> </tr> <tr> <td>G. Teledyne 5 SM-3U</td> <td>\$43</td> <td>2.6</td> </tr> <tr> <td>*H. Alsons 462PB</td> <td>\$11</td> <td>2.6</td> </tr> <tr> <td>J. Alsons 45C</td> <td>\$58</td> <td>2.7</td> </tr> <tr> <td>K. Moen 3981</td> <td>\$95</td> <td>2.4</td> </tr> </tbody> </table>	Brand and Model	Price	Maximum gpm	F. Sears 20173	\$23	3.4	G. Teledyne 5 SM-3U	\$43	2.6	*H. Alsons 462PB	\$11	2.6	J. Alsons 45C	\$58	2.7	K. Moen 3981	\$95	2.4
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<p><b>Expressions, Equations, &amp; Inequalities, 16–19</b></p> <p>301. Substitute whole numbers for unknown quantities to evaluate expressions</p>	<p>3. If <math>x = 23</math>, then <math>[4 \times (69 \div x)] + 2x = ?</math></p> <p>A. 49 *B. 58 C. 226 D. 230 E. 235</p>																		
<p><b>Graphical Representations, 16–19</b></p> <p>301. Locate points on the number line and in the first quadrant</p>	<p>4. What is the coordinate of point <math>P</math> shown on the real number line below?</p>  <p>F. <math>-3\frac{3}{4}</math> G. <math>-3\frac{1}{4}</math> H. <math>-2\frac{3}{4}</math> *J. <math>-2\frac{1}{4}</math> K. <math>-2</math></p>																		

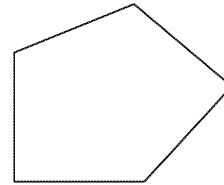
**EXPLORE Mathematics  
College Readiness Standards**

**EXPLORE  
Sample Test Question**

**Measurement, 16–19**

301. Compute the perimeter of polygons when all side lengths are given

5. The length of each side of the pentagon shown below is 17 millimeters. What is the perimeter of the pentagon in millimeters?



- A. 22
- B. 44
- C. 68
- \*D. 85
- E. 102

**Probability, Statistics, & Data Analysis, 20–23**

401. Calculate the missing data value, given the average and all data values but one

6. Carmen was excited about the possibility of earning the “Mayfield Math Award.” In order to do this she must have an average score of at least 92 on her first 5 tests. If her first 4 scores were 96, 90, 89, and 97, what is the lowest possible score Carmen could have on the 5th test and still earn the award?

- \*F. 88
- G. 89
- H. 90
- J. 91
- K. 92

**Probability, Statistics, & Data Analysis, 20–23**

403. Determine the probability of a simple event

7. Kane bought a bag of taffy at the candy store. He got 10 vanilla for his mom, 15 chocolate for his dad, 6 licorice for his sister, and 22 peppermint for himself. On the way home, Kane’s sister grabbed a piece out of the sack without looking. What are the chances that she pulled out a licorice piece?

- A.  $\frac{1}{6}$
- B.  $\frac{6}{6}$
- C.  $\frac{6}{47}$
- \*D.  $\frac{6}{53}$
- E.  $\frac{47}{53}$

**Numbers: Concepts & Properties, 20–23**

401. Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor

8. A prime number is a whole number greater than 1 that has only 1 and itself as factors. All other whole numbers greater than 1 are considered composite. Which of the following is true of the number 51 ?

- F. 51 is prime because it has no factors other than 1 and 51.
- G. 51 is prime because it is an odd number.
- \*H. 51 is composite because it has 3 as a factor.
- J. 51 is composite because it has 13 as a factor.
- K. It is not possible to tell whether 51 is prime or composite.

**EXPLORE Mathematics  
College Readiness Standards**

**EXPLORE  
Sample Test Question**

**Numbers: Concepts & Properties, 20–23**

401. Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor

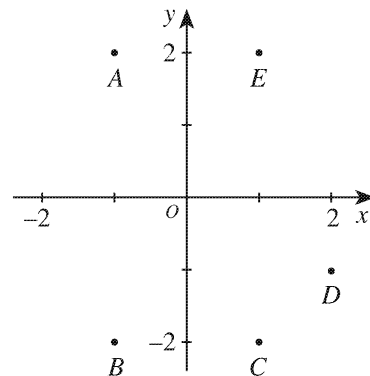
9. Which of the following numbers is the greatest?

- A.  $0.\overline{2324}$
- B.  $0.2\overline{324}$
- C.  $0.23\overline{24}$
- \*D.  $0.232\overline{4}$
- E.  $0.2324$

**Graphical Representations, 20–23**

401. Locate points in the coordinate plane

10. One of the points, labeled *A* through *E*, shown in the standard (*x*,*y*) coordinate plane below has coordinates (−1,2). Which point is it?

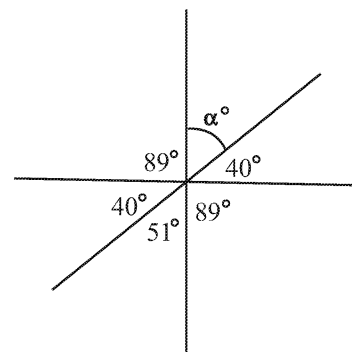


- \*F. *A*
- G. *B*
- H. *C*
- J. *D*
- K. *E*

**Properties of Plane Figures, 20–23**

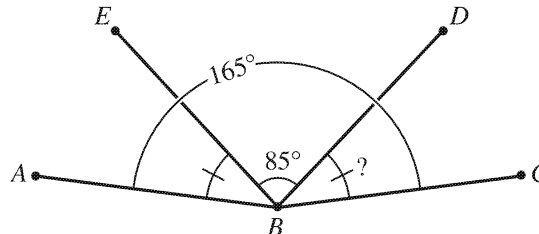
402. Exhibit knowledge of basic angle properties and special sums of angle measures (e.g.,  $90^\circ$ ,  $180^\circ$ , and  $360^\circ$ )

11. What is  $\alpha^\circ$  in the figure below?



- A.  $40^\circ$
- B.  $50^\circ$
- \*C.  $51^\circ$
- D.  $60^\circ$
- E.  $140^\circ$



<b>EXPLORE Mathematics College Readiness Standards</b>	<b>EXPLORE Sample Test Question</b>
<p><b>Expressions, Equations, &amp; Inequalities, 24–25</b></p> <p>502. 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)</p>	<p>12. At the movie theater, popcorn costs \$1.75 per bucket, soft drinks cost \$1.50 each, and the price of admission is \$3.75 for all ages. If <math>x</math> is the number of people who buy 1 ticket, 1 bucket of popcorn, and 1 soft drink, which of the following is an expression for the total number of dollars spent at the movie theater by the <math>x</math> people?</p> <p>F. <math>3.25x</math> G. <math>3.75x</math> H. <math>3.25 + 3.75x</math> J. <math>3.25x + 3.75</math> *K. <math>7x</math></p>
<p><b>Expressions, Equations, &amp; Inequalities, 24–25</b></p> <p>503. Identify solutions to simple quadratic equations</p>	<p>13. If <math>x = 0.7</math>, which of the following values of <math>y</math> makes the equation below true?</p> $5x + y^2 = 9.75$ <p>*A. 2.5 B. 3.125 C. 3.14 D. 4.05 E. 6.25</p>
<p><b>Properties of Plane Figures, 24–25</b></p> <p>501. Use several angle properties to find an unknown angle measure</p>	<p>14. In the figure below, the measure of <math>\angle ABD</math> is equal to the measure of <math>\angle EBC</math>. Also, the measure of <math>\angle ABC</math> is <math>165^\circ</math> and the measure of <math>\angle DBE</math> is <math>85^\circ</math>. What is the measure of <math>\angle DBC</math>?</p>  <p>*F. <math>40^\circ</math> G. <math>42\frac{1}{2}^\circ</math> H. <math>45^\circ</math> J. <math>50^\circ</math> K. <math>55^\circ</math></p>
<p><b>Measurement, 24–25</b></p> <p>501. Compute the area of triangles and rectangles when one or more additional simple steps are required</p>	<p>15. Paco wants to redecorate his room. On one wall he wants to put up new wallpaper. The wall is a 13-by-11-foot rectangle and has a door which takes up a 7-by-3-foot rectangular area. After the area of the door is subtracted, how many square feet of wall remain to be covered?</p> <p>A. 28 B. 48 *C. 122 D. 143 E. 288</p>

**EXPLORE Reading:**  
Match Between College Readiness Standards and Test Questions

<b>EXPLORE Reading College Readiness Standards</b>	<b>EXPLORE Sample Test Question</b>
<p><b>Supporting Details, 13–15</b> 301. Locate basic facts (e.g., names, dates, events) clearly stated in a passage</p>	<p>1. The passage mentions all of the following as candy-bar ingredients EXCEPT:</p> <p>A. crisped rice. B. caramel. *C. raisins. D. almonds.</p>
<p><b>Generalizations and Conclusions, 16–19</b> 301. Draw simple generalizations and conclusions about people, ideas, and so on in uncomplicated passages</p> <p><b>Supporting Details, 16–19</b> 301. Locate simple details at the sentence and paragraph level in uncomplicated passages</p>	<p>2. What, according to the passage, did Hernán Cortés contribute to the development of the candy bar?</p> <p>*F. He introduced the cocoa bean to Spain. G. He protected the secret of cocoa from the abuses of Europe. H. He discovered the cocoa bean growing wild in Mexico. J. He utilized chocolate as an international currency.</p>
<p><b>Generalizations and Conclusions, 16–19</b> 301. Draw simple generalizations and conclusions about people, ideas, and so on in uncomplicated passages</p>	<p>3. Why, according to the passage, did Chicago become the hub for candy-bar production?</p> <p>A. It was located at the midpoint between Minneapolis and Lancaster, Pennsylvania. B. It was the transportation center of the U.S. C. The majority of the population was found in this part of the country. *D. Many dairy products came from the region around Chicago.</p>
<p><b>Meanings of Words, 20–23</b> 401. Use context to determine the appropriate meaning of some figurative and nonfigurative words, phrases, and statements in uncomplicated passages</p>	<p>4. As it is used in line 32, the word <i>fleetingly</i> means:</p> <p>F. of poor quality. *G. lasting only a brief time. H. similar in taste. J. becoming permanent.</p>
<p>The lack of a College Readiness Standards statement indicates that there was insufficient evidence with which to determine a descriptor.</p>	<p>5. The main idea of the passage is that:</p> <p>A. chocolate has been in use since the sixteenth century. B. chocolate, a symbol of royalty, was kept a secret for a long time. *C. the candy bar has come to occupy an important place in American life. D. the candy bar played a part in the outcomes of the two world wars.</p>
<p><b>Generalizations and Conclusions, 16–19</b> 301. Draw simple generalizations and conclusions about people, ideas, and so on in uncomplicated passages</p>	<p>6. According to the passage, which of the following historical events helped to stimulate demand for the chocolate- and candy-bar industry?</p> <p>I. World War I II. World War II III. The Depression</p> <p>F. I only *G. I and II only H. I and III only J. II and III only</p>



<b>EXPLORE Reading College Readiness Standards</b>	<b>EXPLORE Sample Test Question</b>
<b>Generalizations and Conclusions, 16–19</b> 301. Draw simple generalizations and conclusions about people, ideas, and so on in uncomplicated passages	7. It can most reasonably be inferred from the passage that by the turn of the century Hershey was “through with caramels” (line 20) because:  *A. he saw a larger market for chocolate bars. B. they didn’t work in his new chocolate-making machines. C. too many other companies were competing for their sales. D. their taste clashed with the chocolate he had begun to use.
<b>Supporting Details, 24–25</b> 502. Locate and interpret minor or subtly stated details in uncomplicated passages  <b>Sequential, Comparative, and Cause-Effect Relationships, 24–25</b> 501. Order sequences of events in uncomplicated passages	8. The passage indicates that the first chocolate bar was made by the:  F. Mexicans. G. Spanish. *H. British. J. Americans.
<b>Supporting Details, 20–23</b> 401. Locate important details in uncomplicated passages	9. According to the passage, where did Milton Snavely Hershey learn about chocolate making?  A. At a German chocolate-making factory B. At his own plant in Lancaster, Pennsylvania C. At a British chocolate-bar factory *D. At the 1893 Chicago World’s Fair
<b>Supporting Details, 24–25</b> 502. Locate and interpret minor or subtly stated details in uncomplicated passages	10. The passage indicates that candy bars have been named after all of the following EXCEPT:  F. patriotic things. *G. wartime currency. H. popular sayings. J. sporting events.

**EXPLORE Science:**  
Match Between College Readiness Standards and Test Questions

<b>EXPLORE Science College Readiness Standards</b>	<b>EXPLORE Sample Test Question</b>
<p><b>Interpretation of Data, 20–23</b> 402. Compare or combine data from a simple data presentation (e.g., order or sum data from a table)</p>	<p>1. According to the data for Hive 1, one can conclude that the bees spend more time flying than:</p> <p>A. resting. *B. grooming. C. gathering pollen. D. tending the hive.</p>
<p><b>Interpretation of Data, 13–15</b> 201. 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)</p>	<p>2. According to the data presented for Hive 3, the percentage of time spent by the worker bees tending the hive was approximately:</p> <p>F. 10%. *G. 15%. H. 20%. J. 35%.</p>
<p><b>Interpretation of Data, 20–23</b> 402. Compare or combine data from a simple data presentation (e.g., order or sum data from a table)</p>	<p>3. According to the figures, the greatest percentage of time spent by worker bees in gathering nectar is approximately:</p> <p>A. 10%. B. 15%. *C. 25%. D. 35%.</p>
<p><b>Interpretation of Data, 16–19</b> 304. Determine how the value of one variable changes as the value of another variable changes in a simple data presentation</p>	<p>4. According to the figures, what is the relationship between the weight of the individual worker bees and the amount of time spent flying?</p> <p>*F. The lighter the bee, the more time spent flying. G. The heavier the bee, the more time spent flying. H. Lighter bees are faster, so less time is spent flying. J. Heavier bees are faster, so less time is spent flying.</p>
<p><b>Scientific Investigation, 20–23</b> 404. Identify similarities and differences between experiments</p>	<p>5. How is the experimental design of Experiment 1 different from that of Experiment 2 ?</p> <p>*A. Experiment 1 varies the concentration of the solutions and Experiment 2 varies the temperature of the mixture. B. Experiment 1 varies the temperature of the mixture and Experiment 2 varies the concentration of the solutions. C. Experiment 1 varies the concentration of the solutions and Experiment 2 adds a catalyst. D. Experiment 1 adds a catalyst and Experiment 2 varies the temperature of the mixture.</p>
<p><b>Interpretation of Data, 16–19</b> 304. Determine how the value of one variable changes as the value of another variable changes in a simple data presentation</p>	<p>6. Based on the results of Experiment 2, what is the relationship, if any, between the temperature of the mixture and the reaction time?</p> <p>*F. As the temperature increases, the reaction time decreases only. G. As the temperature increases, the reaction time stays the same. H. As the temperature decreases, the reaction time increases, then decreases. J. There is no relationship between the temperature and the reaction time.</p>

<b>EXPLORE Science College Readiness Standards</b>	<b>EXPLORE Sample Test Question</b>
<b>Interpretation of Data, 16–19</b> <b>303.</b> Find basic information in a brief body of text	<b>7.</b> Which of the following indicated that the reaction was completed in the experiments? <b>A.</b> Solution A was added to Solution B. <b>B.</b> The two solutions were stirred. <b>C.</b> The mixed solutions turned clear and colorless. <b>*D.</b> The mixed solutions turned dark blue.
<b>Evaluation of Models, Inferences, and Experimental Results, 24–25</b> <b>501.</b> Select a simple hypothesis, prediction, or conclusion that is supported by two or more data presentations or models	<b>8.</b> Based on the results of Experiments 2 and 3, which of the following conditions would most likely lead to the longest reaction time? <b>F.</b> A reaction temperature of 50°C and the use of a catalyst <b>G.</b> A reaction temperature of 50°C and no catalyst <b>H.</b> A reaction temperature of 30°C and the use of a catalyst <b>*J.</b> A reaction temperature of 10°C and no catalyst
<b>Interpretation of Data, 24–25</b> <b>505.</b> Identify and/or use a simple (e.g., linear) mathematical relationship between data	<b>9.</b> Based on the results of Experiment 2, one would predict that if the reaction was repeated at 2.2°C, the reaction time would be approximately: <b>A.</b> 8 sec. <b>B.</b> 30 sec. <b>C.</b> 60 sec. <b>*D.</b> 116 sec.
<b>Scientific Investigation, 20–23</b> <b>402.</b> Understand a simple experimental design	<b>10.</b> Which of the following conditions was directly changed by the students in Experiment 1 ? <b>F.</b> Total volume of the mixture <b>*G.</b> Concentration of each solution in the mixture <b>H.</b> Temperature of the mixture <b>J.</b> Reaction rate