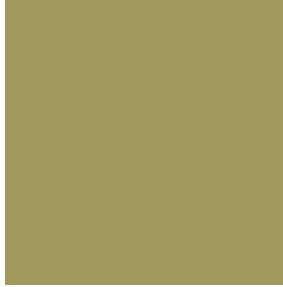
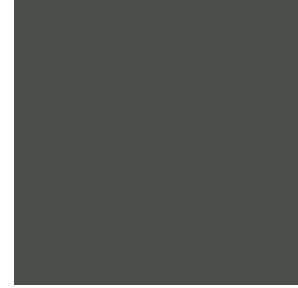


College and Career  
Readiness;  
Unpacking EPAS  
EXPLORE MATH  
and  
ENGLISH




Lincolnwood School District 74

Ben Ditkowsky, Ph.D.

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2

### College And Career Ready

- To be successful after high school, today's graduates must be prepared for the ever-increasing demands of college and the workplace (collegecareerready.org)
- ... it all starts with P-12. Students must graduate from high school **ready** for the demands of postsecondary education




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3

### Are Our Students Ready?

- According to the most recent results of the Trends in International Mathematics and Science Study, United States eighth-graders rank 15th (of 45) in average mathematics score (Gonzales et al, 2004).
- According to the most recent results of the Programme for International Student Assessment) United States 15-year-olds rank 28th (of 40) in average mathematics performance, 18th in average reading performance, and 22nd in average science performance (Organisation for Economic Co-operation and Development, 2004).

Lincolnwood School District 74 – Kids Are Our Compass




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4

### What Does College and Career Ready Require?

- According to ACT, 85 percent of students who meet both the EXPLORE and PLAN Mathematics Benchmarks are likely to be prepared for College Algebra by the time they graduate from high school.

Test	College Course	EXPLORE	PLAN	ACT
English	English Composition	13	15	18
Mathematics	College Algebra	17	19	22
Reading	Social Science	15	17	21
Science	College Biology	20	21	24




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Module B. College and Career Ready, Unpacking EXPLORE

	ADD	SUBTRACT	MULTIPLY	DIVIDE	ORDER OF OPS	SQUARE ROOT	PROBABILITY	SUBSTITUTION	ALGEBRA	GEOMETRY	ESTIMATION	ROUND	SORT	VOCABULARY	READING COMPREHENSION	LOGIC	DETAILS	PLACE VALUE	READ AND INTERPRET CHARTS FRACTIONS, DECIMALS and MONEY	POSITIVE AND NEGATIVE	
1																					
2																					
3																					
4																					
5																					
6																					
7																					
8																					
9																					
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29																					
30																					



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9

### What Does EXPLORE MATH Require?

**DIRECTIONS:** Solve each problem, choose the correct answer, and then use your pencil to fill in the corresponding circle on your answer sheet.


Do not use too much time on any one problem. Solve the ones you can do quickly; then return to the others in the time you have left.

You should have a calculator to use on this test. You may use your calculator for any problems you choose, but some of the problems may best be done without using a calculator.

Note: Unless the problem indicates otherwise, assume all of the following.

1. Diagrams are NOT necessarily drawn to scale.
2. Geometric figures lie in a plane.
3. The word *line* indicates a straight line.
4. The word *average* indicates arithmetic mean. For example, the average of 2, 6, and 7 is  $\left(\frac{2+6+7}{3}\right)$ .

Please do NOT write in your test booklet. You may do your figuring on the scratch paper provided. Your scratch paper will be collected along with your test booklet.




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10

### What Does EXPLORE MATH Require?

1.  $476 \times 52 = ?$

- A. 528
- B. 952
- C. 3,332
- D. 24,752
- E. 33,320

2.  $0.003 + 4.1 = ?$

- F. 4.003
- G. 4.1003
- H. 4.103
- J. 4.13
- K. 4.4


3. What is the least expensive shower head on the chart below that will NOT deliver more than 3 gallons of water per minute (gpm)?

Information from Consumer Reports, "How to Save Water," ©1990 by Consumers Union of U.S., Inc.

Brand and Model	Price	Maximum gpm
A. Sears 20173	\$23	3.4
B. Teledyne 5 SM-3U	\$43	2.6
C. Alsons 462PB	\$11	2.6
D. Alsons 45C	\$58	2.7
E. Moen 3981	\$95	2.4

4. Central High's musical event must make \$780 in order to break even. If each ticket costs \$6, how many tickets must be sold to break even?

- F. 125
- G. 130
- H. 138
- J. 180
- K. 774




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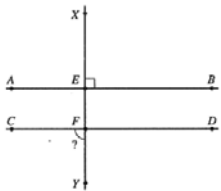
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11

### What Does EXPLORE MATH Require?

5. Lines  $\overleftrightarrow{AB}$  and  $\overleftrightarrow{CD}$  are parallel in the figure below. Line  $\overleftrightarrow{XY}$  intersects  $\overleftrightarrow{AB}$  at a right angle. What is the measure of  $\angle CFY$ ?



- A.  $30^\circ$
- B.  $45^\circ$
- C.  $60^\circ$
- D.  $90^\circ$
- E.  $180^\circ$

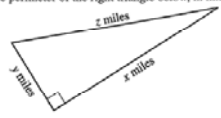
6. If  $4 + \frac{x}{6} = 6$ , then  $x = ?$

- F. 12
- G. 16
- H. 32
- J. 40
- K. 60


7. If  $7x + 3 = 24$ , then  $x = ?$

- A. 2
- B. 3
- C.  $\frac{27}{7}$
- D. 4
- E. 5

8. Which of the following is a general expression for the perimeter of the right triangle below, in miles?



- F.  $x + y + z$
- G.  $2(x + y)$
- H.  $\frac{x}{2} + \frac{y}{2}$
- J.  $\frac{xy}{2}$
- K.  $xy$




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12

### What Does EXPLORE MATH Require?

9. What is  $\alpha$  in the figure below?

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

10. A 2-ounce package of potato chips sells for \$0.49, but a 12-ounce package sells for \$2.39. How much do you save when buying one 12-ounce package instead of six 2-ounce packages?

F. \$0.05  
G. \$0.10  
H. \$0.45  
J. \$0.49  
K. \$0.55

11. Julia earned \$5.20 per hour for  $3\frac{1}{2}$  hours and Suki earned \$4.80 per hour for  $5\frac{1}{2}$  hours. Who earned more money and how much more?

A. Julia earned \$7.00 more.  
B. Julia earned \$17.00 more.  
C. Suki earned \$7.00 more.  
D. Suki earned \$17.00 more.  
E. They each earned the same amount of money.

12. What is the perimeter, in meters, of a square with sides 6.2 meters long?

F. 12.4  
G. 24.8  
H. 25.6  
J. 36.4  
K. 38.44

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13

### What Does EXPLORE MATH Require?

13. What number is in the 4th row from the top and the 2nd column from the left on the chart below?

1	2	3	4	5
6	7	8	9	10
11	12	13	14	15
16	17	18	19	20
21	22	23	24	25

A. 6  
B. 7  
C. 8  
D. 9  
E. 17

14. Your class is going on a camping trip. There are 171 students in your class and each person must pay \$8 for food and equipment and \$3 for transportation. Your class treasurer has collected \$1,320. How many people still need to pay their \$11?

(Note: Assume no partial payments were made.)

F. 6  
G. 11  
H. 51  
J. 120  
K. 165

15. If  $x = 23$ , then  $[4 \times (69 \div x)] + 2x = ?$

A. 49  
B. 58  
C. 226  
D. 230  
E. 235

16. Tomas bought a new book on sale. It regularly cost \$17.95, but was on sale for 20% off. How much did the book cost Tomas?

F. \$ 3.59  
G. \$14.36  
H. \$15.95  
J. \$17.59  
K. \$17.75

17. 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.  $\frac{47}{53}$

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14

### What Does EXPLORE MATH Require?

18. What whole number is closest to the average of the following numbers?  
7, 9, 40, 22, 28

F. 20  
G. 21  
H. 22  
J. 28  
K. 106

19. 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?

A. 28  
B. 48  
C. 122  
D. 143  
E. 288

20. What is the remainder when 189,540 is divided by 27?

F. 0  
G. 7  
H. 13  
J. 250  
K. 7,020

21. 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?

A. 51 is prime because it has no factors other than 1 and 51.  
B. 51 is prime because it is an odd number.  
C. 51 is composite because it has 3 as a factor.  
D. 51 is composite because it has 13 as a factor.  
E. It is not possible to tell whether 51 is prime or composite.

22. 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  $x$  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  $x$  people?

F.  $3.25x$   
G.  $3.75x$   
H.  $3.25 + 3.75x$   
J.  $3.25x + 3.75$   
K.  $7x$

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15

### What Does EXPLORE MATH Require?

23. The sum of the measures of the 3 angles in a triangle is  $180^\circ$ . If the measure of one angle in a triangle is  $40^\circ$ , which of the following could NOT be the measure of another angle in the triangle?

A.  $1^\circ$   
 B.  $40^\circ$   
 C.  $90^\circ$   
 D.  $99\frac{1}{2}^\circ$   
 E.  $141^\circ$

24. 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

25. In a science experiment with a certain type of seed, 70% of the seeds are sprouting after 3 days, and 85% of the seeds are sprouting after 5 days. If 350 more of these seeds are planted, approximately how many of these 350 would you expect to sprout within 5 days?

A. 52  
 B. 105  
 C. 245  
 D. 297  
 E. 350

26. Your teacher used the equation  $x + 19 = 120$  when showing the class how to start to solve the following problem.

*Josie gets paid 5¢ for each newspaper she delivers. She starts with 120 newspapers. If she has 19 newspapers left when she finishes, how much will she be paid for delivering newspapers?*

In the teacher's equation, the variable  $x$  represents the number of:

F. dollars Josie will be paid.  
 G. cents Josie will be paid.  
 H. cents Josie would be paid for delivering the rest of the newspapers.  
 J. newspapers Josie has left.  
 K. newspapers Josie delivered.

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16

### What Does EXPLORE MATH Require?

27. The volume of a pyramid is defined by the formula  $V = \frac{1}{3}Bh$ , where  $V$  stands for volume,  $B$  stands for area of the base, and  $h$  stands for height. What is the volume, in cubic centimeters, of a pyramid that has a base area of 81 square centimeters and a height of 12 centimeters?

A. 31  
 B. 324  
 C. 486  
 D. 972  
 E. 2,916

28. The formula for converting temperature from degrees Fahrenheit ( $F$ ) to degrees Celsius ( $C$ ) is  $C = \frac{5}{9}(F - 32)$ . If the average temperature last month was  $47.3^\circ$  Fahrenheit, what was the average temperature last month in degrees Celsius, to the nearest tenth of a degree?

F.  $-27.5^\circ$   
 G.  $-8.5^\circ$   
 H.  $-5.7^\circ$   
 J.  $8.5^\circ$   
 K.  $27.5^\circ$

29. If  $x = 0.7$ , which of the following values of  $y$  makes the equation below true?

$$5x + y^2 = 9.75$$

A. 2.5  
 B. 3.125  
 C. 3.14  
 D. 4.05  
 E. 6.25

30. In the figure below, the measure of  $\angle ABD$  is equal to the measure of  $\angle EBC$ . Also, the measure of  $\angle ABC$  is  $165^\circ$  and the measure of  $\angle DBE$  is  $85^\circ$ . What is the measure of  $\angle DBC$ ?

F.  $40^\circ$   
 G.  $42\frac{1}{2}^\circ$   
 H.  $45^\circ$   
 J.  $50^\circ$   
 K.  $55^\circ$

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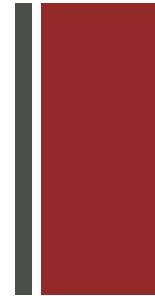
## Directions: What Do I Have to DO?

In the four passages that follow, certain words and phrases are underlined and numbered. In the right-hand column, you will find alternatives for each underlined part. You are to choose the one that best expresses the idea, makes the statement appropriate for standard written English, or is worded most consistently with the style and tone of the passage as a whole. If you think the original version is best, choose "NO CHANGE:"

You will also find questions about a section of the passage, or about the passage as a whole. These questions do not refer to an underlined portion of the passage, but rather are identified by a number or numbers in a box. Sometimes, the paragraphs or the sentences of a paragraph will be referred to in these questions.



## Directions: What Do I Have to DO?



For each question, choose the alternative you consider best and fill in the corresponding circle on your answer sheet. Read each passage through once before you begin to answer the questions that accompany it. You cannot determine most answers without reading several sentences beyond the question. Be sure that you have read far enough ahead each time you choose an alternative.



# What Does EXPLORE ENGLISH Require?



## PASSAGE I

### Back at Camp Tawakanee

I didn't want to go to Camp Tawakanee again last summer. I told my parents that <sup>1</sup> thirteen is too old

- 1. A. NO CHANGE
- B. parents that,
- C. parents, that
- D. parents. That

for camp. "Nonsense," they said. Mine <sup>2</sup> parents always say "nonsense" when they want to end a conversation. I persisted. I pointed out that I'd been to camp for the last seven years. At four weeks per year, I figured I'd done my time.

- 2. F. NO CHANGE
- G. Whose
- H. Her
- J. My

My mother gave my father a look. He asked me what I wanted to do instead of going to camp. I wanted to hang out at the mall. "Nonsense," my parents repeated, then my <sup>3</sup> mother told me for the umpteenth time that one of the best experiences of her life was being crowned Queen of Camp Tawakanee the

- 3. A. NO CHANGE
- B. repeated. My
- C. repeated, my
- D. repeated when my

# What Does EXPLORE ENGLISH Require?



summer that *she* turned thirteen. My father gave my mother a look that warned her not to overdo it.

Of course I wound up back at Camp Tawaknee. At first it was just as bad as I expected.

For one thing I had, to sleep on a top bunk while

Susan Graham, in the bunk below, rolled in their sleep and shook the whole bed. For another thing, we had too much of what my mother calls “structured time”: breakfast at seven, lunch, dinner, calisthenics at six o’clock, three morning activities, two afternoon activities, an evening activity, and lights out at nine o’clock. I get plenty of structured time during the school year without having more of it in the summer.

My counselor, Frannie, turned out to be lots of fun, which was a good thing because she was a terrible cook. On our cabin’s overnight, she charred the hamburgers. Yet she managed to ruin the

marshmallows. It sounds bad, and it was funny. I didn’t even know you *could* ruin marshmallows. By the end of the second week, I had adjusted to Camp

4. F. NO CHANGE  
G. wind  
H. will wind  
J. would have wound
5. A. NO CHANGE  
B. For, one thing I had, to  
C. For one thing, I had to  
D. For one thing, I had to,
6. F. NO CHANGE  
G. its  
H. hers  
J. her
7. Which of the alternatives would be the most logical and effective presentation of this itemized list of the “structured time”?  
A. NO CHANGE  
B. three morning, two afternoon, and an evening activity; breakfast at seven; lunch; dinner; calisthenics at six o’clock;  
C. calisthenics at six o’clock; activities—three in the morning, two in the afternoon, one in the evening—after breakfast at seven, lunch, and dinner;  
D. calisthenics at six o’clock, breakfast at seven, three morning activities, lunch, two afternoon activities, dinner, an evening activity,
8. F. NO CHANGE  
G. She also  
H. Therefore, she  
J. She nonetheless
9. A. NO CHANGE  
B. like  
C. but  
D. so

# What Does EXPLORE ENGLISH Require?



Tawakanee. My "attitude," you might say, had changed. <sup>10</sup>

My parents somehow figured it out. "You seem to be having a good time," they wrote.

I crumpled the letter. "Nonsense," I said.

10. The writer has decided that a sentence should be inserted at the beginning of this paragraph in order to introduce the narrator's shift in attitude. Which of the following would most effectively accomplish this?

- F. Things went from bad to worse.
- G. As the session went on, camp grew on me.
- H. What else can I tell you about camp?
- J. Camp became more boring as the session wore on.

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## PASSAGE II

### A Friend's Best Fan

There's an old saying that a dog can be a "man's best friend." However, after my experience with Pepper, my friend Smitty's German shepherd, I'm convinced it should also say a dog can be "a friend's best fan."

The gang had gotten together to play football. We were a tough, fearlessly crew <sup>11</sup>

that we boasted about playing with no equipment. <sup>12</sup>

Actually, you were too poor to buy any helmets or pads; we just didn't want to admit we might get hurt. <sup>13</sup>

11. A. NO CHANGE  
B. tough, fearless  
C. fearlessly, tough  
D. tough fearlessly

12. F. NO CHANGE  
G. which we  
H. who  
J. who,

13. A. NO CHANGE  
B. those of us  
C. we  
D. they

# What Does EXPLORE ENGLISH Require?



Our football field was the vacant lot across  
the street from our school where we went. We

14

gathered, there and tossed the football around to  
warm up. Just as we were ready to choose teams,

15

which is unnecessary in individual sports, a '61

16

convertible pulled up, and Smitty jumped from the  
driver's seat.

17

"Choose me!" yelled Smitty from across the  
lot. Before he trotted over to join us, he commanded  
Pepper to "Stay!" The huge German shepherd sat  
alert, watching Smitty from the back seat of the car.

We picked teams, and Smitty's team kicked off  
to mine. We couldn't seem to get our game going.  
After three incomplete passes, we were forced to punt  
the ball.

Smitty caught the ball near his goal line. He  
started up the right side of the field, running close to  
the passenger side of his parked convertible. At that  
point, my teammates and I had a clear shot at Smitty,  
and I tackled him as hard as I could.

- 14. F. NO CHANGE  
G. where we went to school.  
H. that we attended.  
J. OMIT the underlined portion and end the sentence with a period.
- 15. A. NO CHANGE  
B. gathered there  
C. gathered; there  
D. gathered; there,
- 16. F. NO CHANGE  
G. which you don't have to do in individual sports,  
H. which is unnecessary in individual sports like tennis,  
J. OMIT the underlined portion.
- 17. A. NO CHANGE  
B. will jump  
C. is jumping  
D. jumping

# What Does EXPLORE ENGLISH Require?



[1] Prior to when a reaction could take place,  
18  
Pepper had pounced on me like an all-pro tackle.

[2] She growled ferociously. [3] She tried to rip my shirt with her teeth. [4] I don't think she would have hurt me, but I didn't have a chance to find out.

[5] Smitty called off his dog. 19

After that, Pepper became our group mascot and was generally friendly toward everyone. She did favor Smitty, though, and after my experience it seemed that Smitty, guarded by Pepper's presence, was always on the winning team. 20

- 18. F. NO CHANGE
- G. Before anybody could react,
- H. Previous to a point in time that a reaction was possible,
- J. In a flash of thunder faster than anybody could react,

19. For the sake of unity and coherence, Sentence 1 would most logically be placed:

- A. where it is now.
- B. after Sentence 2.
- C. after Sentence 3.
- D. after Sentence 5.

20. Which of the following sentences, if added at this point, would most effectively illustrate how Pepper helped Smitty play football?

- F. Smitty usually got tackled right away.
- G. Smitty was the only player I knew who never crossed the goal line again.
- H. Smitty was not able to score another touch-down.
- J. Smitty was the only player I knew who could race untouched into the end zone.

