

3.2

Writing Expressions
For use with Activity 3.2

Essential Question How can you write an expression that represents an unknown quantity?

1 ACTIVITY: Ordering Lunch

Work with a partner. You use a \$20 bill to buy lunch at a café. You order a sandwich from the menu board.



a. Complete the table. In the last column, write a numerical expression for the amount of change received.

Sandwich	Price (dollars)	Change Received (dollars)
Reuben		
BLT		
Egg salad		
Roast beef		

b. **REPEATED REASONING** Write an expression for the amount of change you receive when you order any sandwich from the menu board.

c. Compare the expression you wrote in part (b) with the expression in the last column of the table in part (a).

3.2 Writing Expressions (continued)

- d. The café offers several side dishes, each at the same price. You order a chicken salad sandwich and two side dishes. Write an expression for the total amount of money you spend. Explain how you wrote your expression.
- e. The expression $20 - 4.65s$ represents the amount of change one customer receives after ordering from the menu board. Explain what each part of the expression represents. Do you know what the customer ordered? Explain your reasoning.

2 ACTIVITY: Words That Imply Addition or Subtraction

Work with a partner.

- a. Complete the table.

Variable	Phrase	Expression
n	4 more than a number	
m	the difference of a number and 3	
x	the sum of a number and 8	
p	10 less than a number	
n	7 units farther away	
t	8 minutes sooner	
w	12 minutes later	
y	a number increased by 9	

3.2 Writing Expressions (continued)

- b. Here is a word problem that uses one of the expressions in the table.

You arrive at the café 8 minutes sooner than your friend. Your friend arrives at 6:42 P.M. When did you arrive?

Which expression from the table on the previous page can you use to solve the problem?

- c. Write a problem that uses a different expression from the table.

3 ACTIVITY: Words That Imply Multiplication or Division

Work with a partner. Match each phrase with an expression.

the product of a number and 3 $n \div 3$

the quotient of 3 and a number $4p$

4 times a number $n \cdot 3$

a number divided by 3 $2m$

twice a number $3 \div n$

What Is Your Answer?

4. **IN YOUR OWN WORDS** How can you write an expression that represents an unknown quantity? Give examples to support your explanation.

3.2**Practice**

For use after Lesson 3.2

Write the phrase as an expression.

1. the total of 8 and 13
2. 42 divided by 7

Give two ways to write the expression as a phrase.

3. $6 + p$
4. $9m$

Write the phrase as an expression. Then evaluate when $x = 3$ and $y = 15$.

5. 7 more than the quotient of a number y and 5
6. twice the sum of a number x and 8

7. You earn \$7 for every hour that you babysit.

- a. Complete the table.

Hours	1	2	3	4	5	6	7	8
Earnings								

- b. Write an expression for the amount you earn after h hours.