Lesson B4: Packages and Groups

Do Now

1. Label each part of the expression below using the vocabulary: *term, coefficient, variable, and constant*.

   Some words may be used more than once.

   3x + 8y + 15

2. What are some different expressions that could be written to represent the cost of the fruit snacks pictured to the right?

3. Some students suggested the expressions below, which expressions did we already discover? Are there any new expressions? What do the variables represent?

   2*b*

   2 x *b*

   10*p* + 10*p*

   20*p*

   2 x 10*p*

   2(10*p*)

Quick Check

If we use the variable b, it represents _____

If we use the variable p, it represents _____

4. Write at least 2 expressions to represent the “Classic Mix”
(Pictured to the right).

5. Usually, the unit price of each package in a variety mix is the same. If each snack costs the same price what expression could you write?

6. If the unit price of each snack is $0.65, how much does the entire box cost? Explain how you calculated the total cost.

7. With your partner, write two different expressions to represent the total price of all items pictured to the right.

8. What other expressions might you write to represent the purchase if each flavor was a different price?

Discussion

The distributive property allows us to show groups of quantities using parentheses. It is especially helpful when terms inside of the parenthesis are not like terms because it allows us to simplify expressions.

When we use the distributive property, we multiply all of the terms inside the parentheses by the number on the outside of the parenthesis.

Example #1

3(2x + 3y)
3(2x) + 3(3y)
6x + 9y

Example #2

4(3x + 5)
4(3x) + 4(5)
12x + 20

Simplify each expression below using the distributive property

9. 3(x + 4)

10. 10(2b − 6)

11. 6(a − 2)

12. ½ (12x + 20)

13. ¼ (8x + 4)

Applying The Distributive Property

14. A few friends are going to a theme park this weekend. Each of them plans to spend some money on food, *f*, and $15 to enter the park. If five friends are going to the theme park, write an expression using parentheses to model the total amount of money the friends are spending altogether using the distributive property.

15. Compare the strategies used by Student A and Student B.
Did both students use the distributive property? Where did they use it?
Which strategy do you prefer? Why?

Student A
$2(n + 5 + 12)$
$2(n + 17)$
$2n + 34$

Student B
$2(n + 5 + 12)$
$2n + 10 + 24$
$2n + 34$

Exit Ticket / Summary

16. Explain the distributive property in your own words and provide at least one example of how it can be used to simplify an expression.

17. A student is selling candles to raise money for a school trip.
The student sells 50 small candles that cost, x, dollars and 50 large candles that cost $15. Write an expression using the distributive property with parentheses to model the total money the student can make.