LESSON MAKER PRO

Expression Detectives

Show the calculation, then tell what it means.

GRADE 5 · 5.OA.A.2

CCSS.Math.Content.5.OA.A.2 "Write simple expressions that record calculations with numbers, and interpret numerical expressions without evaluating them. For example, express the calculation "add 8 and 7, then multiply by 2" as 2 × (8 + 7)..."

NAME _____ DATE _____

GROUP FIRST

An expression shows a calculation, but you do not need to find its total. Use parentheses to show numbers that must be combined first. You can also describe a multiplication expression by telling how many times as large one grouped amount is.

WORKED EXAMPLE

Write an expression for: Add 14 and 6, then multiply the sum by 3.

1. Find the numbers that are added first: 14 + 6.
2. Put parentheses around that sum: (14 + 6).
3. Multiply the grouped sum by 3: 3 x (14 + 6).

Answer: 3 x (14 + 6)

PRACTICE 6 problems

1 Write an expression for: Add 9 and 4, then multiply the sum by 5.

ANSWER _____

2 Write an expression for: Multiply 7 by 8, then add 12.

ANSWER _____

3 Read 11 x (25 + 10). Write a sentence that tells what this expression means without finding its value.

ANSWER _____

4 Without calculating, complete the statement: 4 x (37 + 2) is ___ times as large as (37 + 2).

ANSWER _____

5 Which expression means "Multiply 9 by the sum of 11 and 13"? Write the expression.

ANSWER _____

6 Write words that describe 18 + 4 x 2. Do not find the value.

ANSWER _____

APPLY IT Show your work

1 For a school game night, Maya packs 8 prize bags. Each bag has 12 trading cards and 5 pencil toppers. Write an expression for the total number of items. Then explain what the expression means without finding the total.

WORK SPACE

ANSWER _____

2 At a school festival, 9 activity tables each receive 16 game tokens and 7 voting slips. Write an expression for the total items placed on all tables. Then tell how many times as large this total is as the number of items at one table.

WORK SPACE

ANSWER _____

CHALLENGE One step up

Team A uses 20 x (27 + 8). Team B uses 5 x (27 + 8). Without calculating either total, explain how Team A's total compares with Team B's total.

WORK SPACE AND ANSWER

ANSWER KEY

Expression Detectives

GRADE 5 · 5.OA.A.2

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	Write an expression for: Add 9 and 4, then multiply the sum by 5.	**5 x (9 + 4)**
2	Write an expression for: Multiply 7 by 8, then add 12.	**(7 x 8) + 12**
3	Read 11 x (25 + 10). Write a sentence that tells what this expression means without finding its value.	**It means eleven times the sum of 25 and 10.**
4	Without calculating, complete the statement: 4 x (37 + 2) is ___ times as large as (37 + 2).	**4**
5	Which expression means "Multiply 9 by the sum of 11 and 13"? Write the expression.	**9 x (11 + 13)**
6	Write words that describe 18 + 4 x 2. Do not find the value.	**Add 18 to the product of 4 and 2.**

PART 2 · APPLY IT

1. **8 x (12 + 5); It represents eight times the number of items in one prize bag.** First combine the items in one bag with parentheses. Then multiply that grouped amount by the number of bags.
2. **9 x (16 + 7); 9 times as large.** The parentheses represent the items at one table. Multiplying by 9 makes the total nine times the amount at one table.

CHALLENGE

Team A's total is 4 times Team B's total because 20 is 4 times 5 and both expressions multiply the same grouped amount.

Accept equivalent expressions with factors in either order and parentheses that do not change the calculation. Accept clear interpretations that identify the grouped sum and the number of equal groups without evaluating.