

Expression Detective

Write what happens, then read the calculation.

GRADE 5 • NY-5.OA.2

NY-5.OA.2 "Write simple expressions that record calculations with numbers, and interpret numerical expressions without evaluating them."

NAME _____

DATE _____

READ THE OPERATIONS

A numerical expression uses numbers and operation signs to show a calculation. Read parentheses first, then multiplication or division, and then addition or subtraction. Do not solve the expression unless the question asks you to.

WORKED EXAMPLE

A music app has 8 playlists with 6 songs on each playlist. Then 5 bonus songs are added. Write a numerical expression. Do not evaluate it.

1. Start with 8 equal groups of 6: 8×6 .
2. Add the 5 bonus songs: $(8 \times 6) + 5$.

Answer: $(8 \times 6) + 5$

PRACTICE 6 problems

- 1** A library has 4 carts with 12 books on each cart and 7 books on a desk. Write a numerical expression for the total number of books. Do not evaluate it.

ANSWER _____

- 2** What calculation does $18 \div 3 + 10$ show? Do not find the result.

ANSWER _____

- 3** A player starts with 17 points and loses 2 points during each of 4 turns. Write a numerical expression for the player's points. Do not evaluate it.

ANSWER _____

- 4** What calculation does $9 \times (14 - 2)$ show? Do not find the result.

ANSWER _____

- 5** There are 2 bags with 13 beads in each bag, plus 1 loose bead. Write a numerical expression for the total number of beads. Do not evaluate it.

ANSWER _____

- 6** A game has 27 tokens shared equally among 9 players. Each player then earns 4 more tokens. Write a numerical expression for the number of tokens one player has. Do not evaluate it.

ANSWER _____

APPLY IT Show your work

1

At a coding club, 7 teams earn 14 points for each completed mission. The club also receives 3 bonus points. Write a numerical expression for the total points, and tell what the expression means. Do not evaluate it.

WORK SPACE

ANSWER _____

2

In a game tournament, 48 tokens are shared equally among 12 players. Each player also earns 2 bonus tokens. Write a numerical expression for the number of tokens one player has, and tell what the expression means. Do not evaluate it.

WORK SPACE

ANSWER _____

CHALLENGE One step up

Four crates each hold 11 juice boxes. A snack stand removes 3 juice boxes from each crate. Without evaluating, explain why $4 \times (11 - 3)$ and $(4 \times 11) - (4 \times 3)$ describe the same number of juice boxes left.

WORK SPACE AND ANSWER

PART 1 • PRACTICE

#	PROBLEM	ANSWER
1	A library has 4 carts with 12 books on each cart and 7 books on a desk. Write a numerical expression for the total number of books. Do not evaluate it.	$(4 \times 12) + 7$
2	What calculation does $18 \div 3 + 10$ show? Do not find the result.	Divide 18 by 3, then add 10.
3	A player starts with 17 points and loses 2 points during each of 4 turns. Write a numerical expression for the player's points. Do not evaluate it.	$17 - (2 \times 4)$
4	What calculation does $9 \times (14 - 2)$ show? Do not find the result.	Subtract 2 from 14, then multiply the difference by 9.
5	There are 2 bags with 13 beads in each bag, plus 1 loose bead. Write a numerical expression for the total number of beads. Do not evaluate it.	$(2 \times 13) + 1$
6	A game has 27 tokens shared equally among 9 players. Each player then earns 4 more tokens. Write a numerical expression for the number of tokens one player has. Do not evaluate it.	$(27 \div 9) + 4$

PART 2 • APPLY IT

- $(7 \times 14) + 3$. It means multiply 7 teams by 14 points, then add 3 bonus points.** Multiply the number of teams by the points earned by each team. Add the club's bonus points after that.
- $(48 \div 12) + 2$. It means divide 48 tokens equally among 12 players, then add 2 bonus tokens to one player's share.** First show the equal sharing with division. Then add the bonus tokens each player earns.

CHALLENGE

Both expressions start with 4 crates of 11 juice boxes. The first removes 3 from each crate before counting all the crates, and the second counts all the juice boxes first and then removes 3 from each of 4 crates.

Accept equivalent expressions that keep the same grouping and order of operations, such as $4 \times 12 + 7$ for $(4 \times 12) + 7$. For interpretation responses, accept clear wording that names the operations in the correct order without evaluating.