Choose Equivalent Forms Strategically

TOPIC 4 / MATHEMATICS

Write. Represent. Explain.

45-minute lesson • Original classroom examples

What will we learn today?

- Select expanded or factored forms based on the question.
- Use an equation, inequality, table, or diagram to justify your reasoning.
- Explain your answer using mathematical vocabulary and units.

5-minute warm-up

Discuss with a partner: What previous algebra or number skill will help with today’s lesson?

Show one calculation or example in your notebook.

Why this lesson matters

A garden has dimensions 3 and x + 2 and an added strip of 2x.

What is known? What is unknown? Which quantities are related?

Represent the relationship

A garden has dimensions 3 and x + 2 and an added strip of 2x.

$$3(x+2)+2x=5x+6$$

Explain the meaning of the variable, numbers, and operations.

Worked example

Write 3(x + 2) + 2x in simplest form.

$$5x + 6$$

Check: Does the result match the original relationship?

Independent practice

1. Factor 12y + 24 for equal groups.

2. Expand 4(2x − 1) to compare coefficients.

Check your reasoning

Question 1

$$12(y + 2)$$

Question 2

$$8x - 4$$

Group challenge

Which form best reveals total groups: 6x + 18 or 6(x + 3)? Explain.

Each group member must explain one step or defend one claim.

Group challenge • solution

$6(x + 3)$ shows six groups

Compare methods. Does the answer make sense in context?

Additional Practice — If Time Allows

Expand $4(2x - 1)$ to compare coefficients.

Extension: Create a similar problem with different numbers.

2-minute exit ticket

Simplify $2(3n + 4) - n$.

Work independently. Show enough steps to explain your thinking.

Exit ticket • answer

$$5n + 8$$

Reflect: What would you check before moving to the next lesson?