Model Discounts with Equivalent Expressions

TOPIC 4 / MATHEMATICS

Write. Represent. Explain.

45-minute lesson • Original classroom examples

What will we learn today?

- Compare equivalent cost models with distribution and percentages.
- 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

Four identical kits originally cost $12 each before a per-kit discount d.

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

Represent the relationship

Four identical kits originally cost $12 each before a per-kit discount d.

$$4(12 - d) = 48 - 4d$$

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

Worked example

Expand 4(12 − d).

$$48 - 4d$$

Check: Does the result match the original relationship?

Independent practice

1. Expand 3(5 + x).

2. Write a 10% discounted price for n items costing p each.

Check your reasoning

Question 1

$$15 + 3x$$

Question 2

$$0.9np$$

Group challenge

A student writes $4(12 - d) = 48 - d$. Explain the difference.

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

Group challenge • solution

$$48 - 4d$$

Compare methods. Does the answer make sense in context?

Additional Practice — If Time Allows

Write a 10% discounted price for n items costing p each.

Extension: Create a similar problem with different numbers.

2-minute exit ticket

Expand $5(20 - q)$.

Work independently. Show enough steps to explain your thinking.

Exit ticket • answer

$$100 - 5q$$

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