Percent Change as Equivalent Expressions

TOPIC 4 / MATHEMATICS

Write. Represent. Explain.

45-minute lesson • Original classroom examples

What will we learn today?

- Translate percentage increase and decrease into equivalent expressions.
- 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 package is 25% larger than its original mass p.

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

Represent the relationship

A package is 25% larger than its original mass p.

$$p + \frac{1}{4}p = 1.25p$$

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

Worked example

Write a 25% increase on p in two ways.

$$p + 0.25p = 1.25p$$

Check: Does the result match the original relationship?

Independent practice

1. Represent a 20% discount on a price q.

2. Represent 15% more than a cost c.

Check your reasoning

Question 1

$$0.8q$$

Question 2

$$1.15c$$

Group challenge

Explain why a 25% increase is not 0.25p as the final amount.

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

Group challenge • solution

$$p + 0.25p = 1.25p$$

Compare methods. Does the answer make sense in context?

Additional Practice — If Time Allows

Represent 15% more than a cost c.

Extension: Create a similar problem with different numbers.

2-minute exit ticket

Represent 30% less than r.

Work independently. Show enough steps to explain your thinking.

Exit ticket • answer

$$0.7r$$

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