Model and Graph a Real Relationship

TOPIC 4 / MATHEMATICS

Write. Represent. Explain.

45-minute lesson • Original classroom examples

What will we learn today?

- Interpret a table and graph in terms of quantities and units.
- 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 taxi charges $4 to start and $2.50 per kilometer.

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

Represent the relationship

A taxi charges $4 to start and $2.50 per kilometer.

$$F = 4 + 2.5k$$

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

Worked example

Find fares for k = 0, 2, 4.

$$F = 4, 9, 14$$

Check: Does the result match the original relationship?

Independent practice

1. For m = 2 + 0.5b, find mass with b = 6 books.

2. A gym charges $8 to join and $3 per session. Write C(s).

Check your reasoning

Question 1

$$m = 5$$

Question 2

$$C = 8 + 3s$$

Group challenge

Find the starting value and rate of change for F = 4 + 2.5k.

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

Group challenge • solution

4 and 2.5

Compare methods. Does the answer make sense in context?

Additional Practice — If Time Allows

A gym charges $8 to join and $3 per session. Write C(s).

Extension: Create a similar problem with different numbers.

2-minute exit ticket

Find the taxi fare at 6 km.

Work independently. Show enough steps to explain your thinking.

Exit ticket • answer

$$F = 19$$

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