Connect Tables, Graphs, and Equations

TOPIC 4 / MATHEMATICS

Write. Represent. Explain.

45-minute lesson • Original classroom examples

What will we learn today?

- Plot ordered pairs from an equation and identify the starting value.
- 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 plant begins 1 cm tall and grows 2 cm per day.

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

Represent the relationship

A plant begins 1 cm tall and grows 2 cm per day.

$$H = 2d + 1$$

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

Worked example

Make pairs for d = 0, 1, 2, 3.

$$(0, 1), (1, 3), (2, 5), (3, 7)$$

Check: Does the result match the original relationship?

Independent practice

1. For y = 3x, plot x = 0, 1, 2.

2. For y = x + 4, find the y-intercept.

Check your reasoning

Question 1

$$(0, 0), (1, 3), (2, 6)$$

Question 2

$$y(0) = 4$$

Group challenge

A graph has points (0,3),(1,5),(2,7); write a matching equation.

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

Group challenge • solution

$$y = 2x + 3$$

Compare methods. Does the answer make sense in context?

Additional Practice — If Time Allows

For y = x + 4, find the y-intercept.

Extension: Create a similar problem with different numbers.

2-minute exit ticket

For y = 5x + 2, find the point at x = 2.

Work independently. Show enough steps to explain your thinking.

Exit ticket • answer

$$(2, 12)$$

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