

Finding Slope from Two Points (Real-World Rate of Change)

Name: _____ Date: _____

LEARNING OBJECTIVE

The student will calculate slope from two measured points and interpret it as a real-world rate of change.

MATERIALS NEEDED

- ruler or tape measure
- stairs, a ramp, or a sloped surface at home
- paper
- pencil
- graph paper

HANDS-ON ACTIVITY

1. Find a set of stairs, a ramp, or a slanted surface at home. Measure the height (rise) of one full step and the depth (run) of one full step in inches, recording both numbers.
2. Calculate the slope of the stairs using the slope formula: $\text{slope} = \text{rise} \div \text{run}$.
3. Measure and record the total height and total horizontal distance covered by 3 steps together, and calculate the slope again using these totals — check that you get the same slope as one step.
4. On graph paper, plot two points representing your measurements (e.g., (0,0) and (run, rise)) and draw the line connecting them, labeling the slope on the graph.
5. Write the slope as a real-world statement, such as 'For every 1 inch you move forward, the stairs rise ___ inches.'

QUESTIONS

1. What were your rise and run measurements for one step, and what is the slope?
-

2. Did the slope calculated from 3 steps match the slope from 1 step? Why should it?
-

3. Using the slope formula, find the slope between the points (2, 5) and (6, 13).
-

4. In your own words, what does 'slope' represent in a real-world situation like stairs?
