

Slope-Intercept Screen

Explore the parameters of the slope-intercept form of a line.

VIEW Simplified equation of line

DRAG the blue point to change the slope

DRAG the pink point to change the y-intercept

USE the point tool to get the integer coordinates of any point

MANIPULATE the slope and/or y-intercept from the equation

SAVE a line to compare multiple lines simultaneously

SHOW reference lines of $y = x$ or $y = -x$

The screenshot shows a coordinate plane with a line $y = -2x - 3$. A blue point is at $(-4, 5)$ and a pink point is at $(2, -7)$. A control panel on the right allows adjusting the slope (8) and y-intercept (-4) in the equation $y = \frac{8}{-4}x + -3$. It also includes options to save lines, show reference lines, and a point tool.

Game Screen

Challenges are random within each level, but increase in difficulty.

LEVELS 1-2: Set the Slope or Set the Y-Intercept by manipulating either the equation or the graph

LEVELS 3-4: Make the Equation, Graph the Line, or Put Points on Line

Choose Your Level

Level 1, Level 2, Level 3, Level 4

Your Equation: $y = \frac{1}{1}x - 3$

Your Equation: $y = \frac{2}{3}x + 0$

Your Equation: $y = \frac{1}{1}x + 0$

The game screen features a central 'Choose Your Level' menu with four levels. Level 1 shows a person walking on a flat surface. Level 2 shows a person walking uphill. Level 3 shows a person walking on a steep slope. Level 4 shows a person walking on a horizontal surface. To the left, two challenge examples are shown: one with a line and a point, and another with a line and a point. To the right, a challenge example shows a line and a point, and another shows a grid with points.

Complex Controls

- If two points are stacked vertically on any screen, the slope will be displayed as undefined and a red x will appear over the equation.

See all published activities for Graphing Slope-Intercept [here](#).

For more tips on using PhET sims with your students, see [Tips for Using PhET](#).

