

## 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 ( $y = x$ ,  $y = -x$ ), 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 screenshot shows a "Choose Your Level" screen with four levels. Level 1 has 1 star, Level 2 has 2 stars, Level 3 has 3 stars, and Level 4 has 4 stars. 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, another challenge example is shown with a line and a point.

## 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](#).

