

**EQ:** How can we find the equation of a line given a point and a slope?

Questions	Notes
-----------	-------

What is the point-slope formula?

Point-Slope Formula:

$$y - y_1 = m(x - x_1)$$

Given point:  $(x_1, y_1)$

Slope:  $m$

How do you use a point and the slope to write the equation?

\*\*Substitute the given point and slope into the formula and solve for y.  
(Put in slope-intercept form)

Find the equation of the line that passes through the point  $(4, -3)$  with a slope of  $-2$ .

$$y - y_1 = m(x - x_1)$$

$$m = -2$$

$$(4, -3)$$

$x_1$        $y_1$

$$y + 3 = -2(x - 4)$$

$$y + 3 = -2x + 8$$

$$y = -2x + 5$$