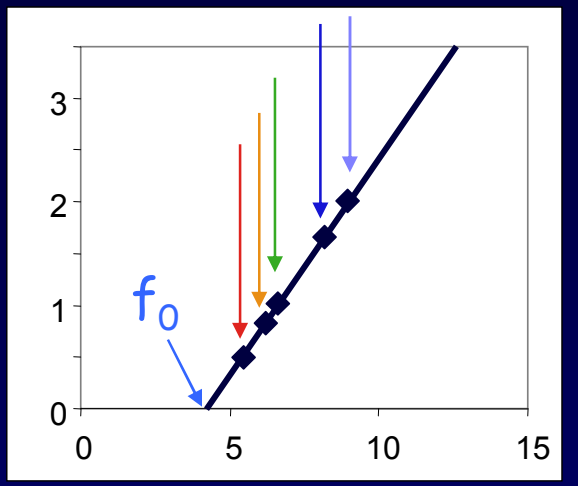
Act 1



1. If the workfunction of the material increased, how would the graph change?
   a. Increased slope
   b. Increased f_o
   c. Both a and b

The y intercept moves down, so the slope is unchanged and f_0 increases → the photons need more energy to be able to free the electrons from the increased binding.

2. We now shine on light with frequency $2f_0$. What effect does doubling the intensity (i.e., the power) of the incident light have on the current of emitted electrons?
   a. doubles
   b. stays the same
   c. decreases

Because the frequency is higher than f_0, each incident photon has a chance to emit an electron. Doubling the number of photons doubles the number of photoelectrons.