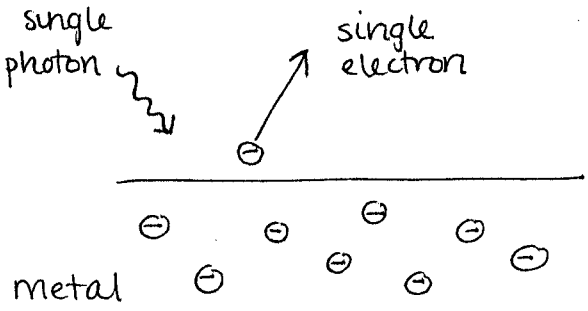
Photoelectric Effect



A single photon transfers all of its energy to a single electron

If the energy of the photon is large enough, it will release the electron from the metal

ϕ = energy binding the electron to the metal

two cases: $E_{photon} < \phi \Rightarrow$ electron doesn't have enough energy to escape metal
NO CURRENT (electron flow)

$E_{photon} > \phi \Rightarrow$ electron has enough energy to escape metal
CURRENT

The energy of the escaping electron is equal to the difference between the photon energy and the binding energy:

$KE_{electron} = E_{photon} - \phi$ (KE = kinetic energy)