The amount of light that enters a camera, like the amount of water that pours from an open faucet into a glass, depends on how long the flow of light continues. If a glass is filled halfway in 2 sec, it will be filled to the top in 4 sec. In the same way, if the shutter is left open twice as long, the film will be exposed to twice as much light.

The flow of light into a camera can be controlled by aperture size just as the flow of water into a glass can be controlled by the faucet setting. Here a faucet running wide open for 2 sec fills a glass. If it runs half shut it fills only half a glass in that time period. The same is true for light. In a given length of time, an aperture opened to one f-stop admits half as much light as one opened to the next larger f-stop. Thus the aperture setting controls the rate at which light enters the camera—contrast to shutter setting, which controls how long the light flow continues.

The quantity of light that reaches a piece of film inside a camera depends on a combination of aperture size (f-stop) and length of exposure (shutter speed). In the same way, the water that flows from a faucet depends on how wide the valve is open and how long the water flows. If a 2-sec flow from a wide-open faucet fills a glass, then the same glass will be filled in 4 sec from a half-open faucet.