Water Energy Usage

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The difficulty in finding the perfect shower temperature could be due to the height of the individual taking the shower and the temperature of the bathroom atmosphere. The purpose of this experiment was to measure the amount of temperature change during a shower. Using a self-constructed apparatus, the temperature was measured (dependent variable) in increments of 15 cm (independent variable) starting from the head of the shower, 0cm, to 135 cm down the apparatus. Newton's Law of Cooling states that the rate at which a body loses heat is directly proportional to the difference in temperature between the body and its surrounding atmosphere. One discovery was made during this experiment and it supports Newton's Law of Cooling. The more access given to the outside atmosphere, the shower loses a greater amount of heat. One solution to this problem could be utilizing an adjustable and removable showerhead (a showerhead that slides vertically on a pole and adjusts to one's height), the less energy a household would consume. Additionally, individuals could close doors while taking a shower and not turn on the bathroom fan. An open door causes the bathroom atmosphere to try and achieve thermal equilibrium with the temperature in the outside atmosphere. Closing the door saves electricity by containing the heat generated by the shower within the bathroom. With the bathroom fan off while taking a shower saves electricity by not having to power the fan as well as not having the hot air removed by the fan. So in conclusion, the closer the individual is to the shower and the less access the bathroom atmosphere has to the outside atmosphere, the less energy they will use to heat their shower.

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