

# Your Power

Purpose: To determine the work and power as you climb stairs

Materials: meter stick, stopwatch

Procedure:

1. Estimate the mass of the climber in kg (Hint: 1 kg = 2.2 pounds)
2. Measure the height (vertical distance) of the stairs
3. The climber should approach the stairs with a steady speed
4. The timer will start the watch as the climber hits the first stair and stop the clock when the climber reaches the top
5. Climbers and timers should rotate until all students have had the opportunity to climb

Observations and Data

1. Calculate the work and the power for yourself
2. Compare your work and power calculations to others

Analysis

1. Which students did the most work? Explain
2. Which students had the most power? Explain with examples
3. Calculate your power in kilowatts

Applications

1. Your local electric company supplies you 1kW of power of 1 hour for 8 cents. Assume that you could climb stairs continuously for 1 h. How much money would this climb be worth?

Don't forget to include a data table, calculations, error analysis and a summary!!