

Physics Mini-Lab
Work, Power, & Energy

Human Power

GOAL: Find how much work you do, and how much power you generate, in climbing stairs.

1. Complete the equations: Work = Power =

Weight Force = Potential Energy =

2. Go out to the SW stairwell and figure out how much work you do walking up 2 flights of stairs at a constant speed. Record calculations/data under #3. below. Here are some hints:

“d” is the **VERTICAL** distance that you travel.

Since your speed is constant, the force you exert is equal to the weight force.

You will need to calculate your own **mass**. Use 2.2 lb = 1.0 kg

3. It is requested that each member of the group do this, *however if utilizing your personal weight is of concern to you please contact your instructor who will provide an alternate method*. Show all your data, work, and results here:

4. Now figure out your power. If you want to enter a “competition”, run up the stairs as fast as you can. If not, just walk. Note: 746 Watts = 1 HP. Show all your data, work, and results here: