[](http://www.google.com/url?sa=i&rct=j&q=weight+lifting+clipart&source=images&cd=&docid=wHMYHkJb-9hg7M&tbnid=XnpkgpcgYNbMDM:&ved=0CAUQjRw&url=http://www.clipartmojo.com/clip-art/weight-lifter--dog-2-5540&ei=kdk0UbCNFoSF2QWRtoG4Dw&bvm=bv.43148975,d.b2I&psig=AFQjCNFN2ZAr_qHD8WE62w9qDPr15AdBfg&ust=1362504428045136)Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Calculating Your Work & Power

[](http://www.google.com/url?sa=i&rct=j&q=running+stairs+clipart&source=images&cd=&cad=rja&docid=3O8Asmhq5KNRlM&tbnid=i20pZr1B7jTwfM:&ved=0CAUQjRw&url=http://www.clipartof.com/portfolio/toonaday/illustration/cartoon-businessman-running-up-stairs-1048488.html&ei=VfA0UfiKD-ul2AWgk4DgAg&bvm=bv.43148975,d.b2I&psig=AFQjCNHFhabbBBCDPaF7zmq5LZ6BzfITxg&ust=1362510290187710)

Procedure:

1. Find a set of stairs.
2. Measure the height of one stair and record.
3. Count the total number of stairs and record.
4. Time yourself walking up the stairs and record.
5. Time yourself running up the stairs and record.

Data

|  |  |  |  |
| --- | --- | --- | --- |
| Stair Height, h (m) | Number of Stairs, # | Walk time, tw (s) | Run time, tr (s) |
|  |  |  |  |

Analysis

1. Calculate the height of the stair case.
2. Calculate your weight in Newtons. (1kg = 2.2lbs)
3. Calculate your Work in climbing the stairs.
   1. Walking
   2. Running
4. Calculate your Power in Watts climbing the stairs.
   1. Walking
   2. Running
5. Calculate your Power in Horsepower climbing the stairs.
   1. Walking
   2. Running
6. Compare the amount of work you did walking and running up the stairs. Explain your answer.
7. Which required more power, walking or running up the stairs? Why?
8. Compare and contrast power and strength? Give an example of an **activity** when each one would be beneficial.