School: _____ Names: _____

Total Score: _____ Place: _____ _____

Science Olympiad
Physics Lab: Work, Energy and Power
Lab Component (40 points)

Lab Component: Design and Construct a [student] Wind-Powered Apparatus to Raise a Mass to a predetermined height in order to maximize the power produced. Team will have 25 minutes from the beginning of the competition to build the device. Moderator will time performance and verify mass, time and height performance.

Equipment:

1. 1 pair scissors
2. 8 – 4"x 6" index cards
3. 1 - 9" x 3/16" diameter dowel
4. 1 – drinking straw
5. 1 – roll masking tape
6. 2 m string (considered 0.000 kg for calculations)
7. 2 – 1"x1"x1" wooden blocks (0.010kg)
8. 1 – small plastic Dixie cup (0.002 kg)

Quantity	Mass (kg)	Height (m)	Time (s)	Work (J)	Power (W)
Measured Value				---	---
Moderator init				---	---
Calculated Value	---	---	---		
Pts Earned [correct calculation]	---	---	---	__ / 5	__ / 5
Pts Earned [performance]	---	---	---	__ / 10	__ / 20

Total Points: _____

Performance Table

Work (J)	>0.01	>0.02	>0.03	>0.04	>0.06	>0.08	>0.10	>0.12	>0.14	>0.16
Work Points	1	2	3	4	5	6	7	8	9	10
Power (W)	>0.0018	>0.0020	>0.0022	>0.0024	>0.0026	>0.0028	>0.0030	>0.0032	>0.0036	>0.0040
Power Points	2	4	6	8	10	12	14	16	18	20

First tie breaker will be Power Performance Points.
Second tie breaker will be Work Performance Points.

Points this page _____