

Name: \_\_\_\_\_

Hour: \_\_\_\_\_

### The Stair Master

**Purpose:** To determine how many times you would need to climb a flight of stairs to burn off a mini candy bar.

**Data Tables:**

$1 \text{ lb} = 4.45 \text{ N}$

# Stairs	Single stair height	Total stair height	Weight	Weight
	(m)	(m)	(lbs)	(N)

Time trial 1	Time trial 2	Time Average	Work	Power
(s)	(s)	(s)	(J)	(W)

**Calculations:** Show formulas, algebra, plugged in numbers, units, and circled answer for EACH of the following.

- Weight in Newtons
- Work
- Power
- Kilocalories burned
- Flights of stairs needed to burn off candy bar

convert W in J into Kcal

~40 Kcal

$\frac{\text{Kcal candy}}{\text{Kcal burned}}$

**Questions:**

How is the human body able to do work? (Where does the energy come from?)

**Results:**

- How much work did you do while climbing the stairs?
- How many kilocalories did you burn climbing the stairs?
- How many flights of stairs would you need to climb in order to burn off the candy bar that you ate?