How much energy do YOU require to stay alive?

Your Basal Metabolic Rate (**BMR**) is the **minimum** energy required by your body to stay alive (It is your **resting** energy consumption).
The BMR is approximately 1 Calorie per Kg body mass per hour.

- Calculate your resting BMR (Cal/day) using your body mass (kg).
- Note that: 1 kg = 2.2046 lb.
- Remember that: 1 nutritional Calorie = 1 kcal
- Convert this to J/day; 4.184 J = 1 cal
- James Watt (1736-1819) was the first person to measure the power that a healthy horse can deliver, and he called it a **horsepower** (hp). The SI unit of power is named after him and is called a watt.
- The watt is an unit of power; i.e., of how fast energy is being used
- The watt is a power unit: 1 W = 1 watt = 1(Joule/second) = 1 J/s
- Use the previous result to calculate the power in watts you require while resting
- 1 hp = 746 watts. The typical USA car engine can deliver 100 hp.
- Calculate how many hp you consume while resting.
- Compare your wattage with that of at least one of your classmates.

Example solution:

- Assuming a body mass of 160 lb; Then:

BMR =	160 lb	1 Kg	1 Cal	24 hr	= 1742 Calories
		2.2046 lb	Kg ● hr	1 day	day

- Then:

1742 Calories	10^3 calories	4.1834 J	1 day	1 hr	1 min	= 84.34 J
day	1 Calorie	1 calorie	24 hrs	60 min	60 sec	sec

- However, 84.34 J/s = 84 Watts (2 s.f.)
- And, (84 Watts)* (1 hp/746 Watts) = 0.11 horsepower (2 s.f.)

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