

## 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;  $4.184 \text{ J} = 1 \text{ cal}$
- 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:  $1 \text{ W} = 1 \text{ watt} = 1(\text{Joule/second}) = 1 \text{ J/s}$
- Use the previous result to calculate the power in watts you require while resting
- $1 \text{ hp} = 746 \text{ watts}$ . 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.