

Power



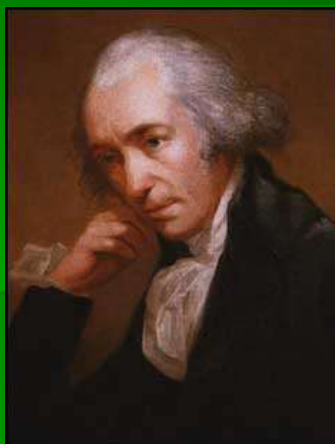
Power

- How quickly energy is transferred.
- Amount of energy applied per unit time.
- $\text{POWER} = \text{ENERGY} / \text{TIME}$

Who has more power?

- <https://www.youtube.com/watch?v=5xsiITSAHPk>

The watt (W)

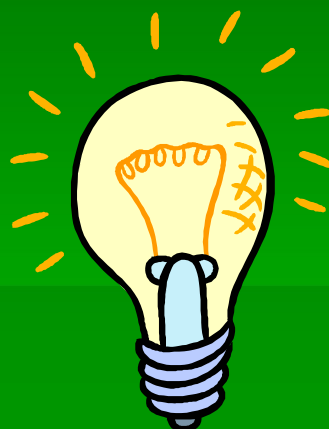


- A unit named after Scottish inventor James Watt.
- Invented the steam engine.
- $P = E/t$
 - Joules/second
 - 1 watt = 1 J/s



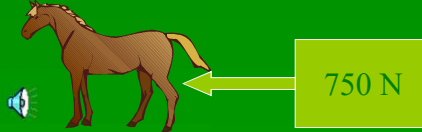
watts

- Used to measure power of light bulbs and small appliances
- An electric bill is measured in kW/hrs.
- 1 kilowatt = 1000 W



Horsepower (hp) = 745.5 watts

- Traditionally associated with engines. (car, motorcycle, lawn-mower)
- The term *horsepower* was developed to quantify power. A strong horse could move a 745.5 N object one meter in one second.



Which Energy to Use?

- $PE = mgh$
- $KE = \frac{1}{2}mv^2$

