Power

As mentioned, machines (simple or complex) help us do work.   I can lift 100 bricks up 2 metres, but it would take a long time.   A truck with a shovel can lift all 100 bricks at once. Although we do the same work (Work done = Change in Eg), the truck does it much faster – it has more power!

Power (P) = rate of work.   'Rate' suggests there is a 'time' component here which there is:

$$P = \frac{W\ done}{time} \quad ... or... \quad P = \frac{E\ consumed/used}{time}$$

Simply stated

$$P = W/t \quad or\ P = E/t$$

Unit – Following the logic of the formula, power is measured, therefore, in J/s

To honour James Watt, a Scottish inventor, who dramatically improved the steam engine in the late 1700's, the joule/second was renamed the 'watt'

1 J/s = 1 watt = 1 W

You can learn more about James Watt at this link
http://inventors.about.com/od/wstartinventors/a/james_watt.htm

Horsepower – A horse working steadily is believed to exert about 750 joules/second or 750 watts of power.

1 hp (1 horsepower) = 750 W