

## The watt

The watt (W) is the modern scientific unit of power. One watt is the power when energy is transferred at the rate of one joule per second.

$$1 \text{ watt} = \frac{1 \text{ joule}}{1 \text{ second}}$$

For example, what is the power of a car engine that can increase the kinetic energy of a car by 3 000 J in 0.5 s?

$$\text{power} = \frac{\text{energy transferred}}{\text{time taken}}$$

$$= \frac{3000}{0.5}$$

$$= 6\,000 \text{ W, or } 6.0 \text{ kilowatts (kW).}$$