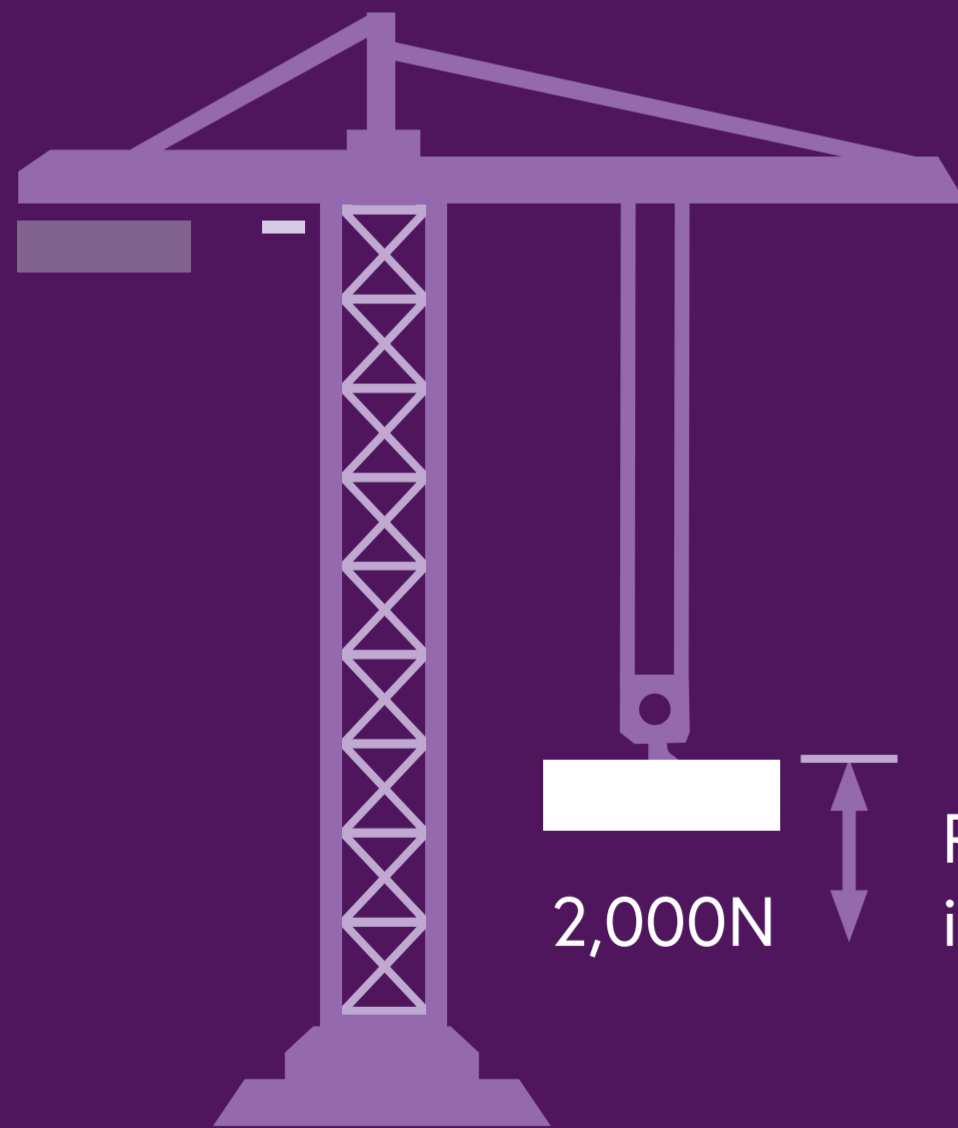


# Power

The rate of transfer of energy

## Mechanical power



$$\text{work done} = \text{force} \times \text{distance}$$

$$\text{power} = \frac{\text{work done}}{\text{time taken}}$$

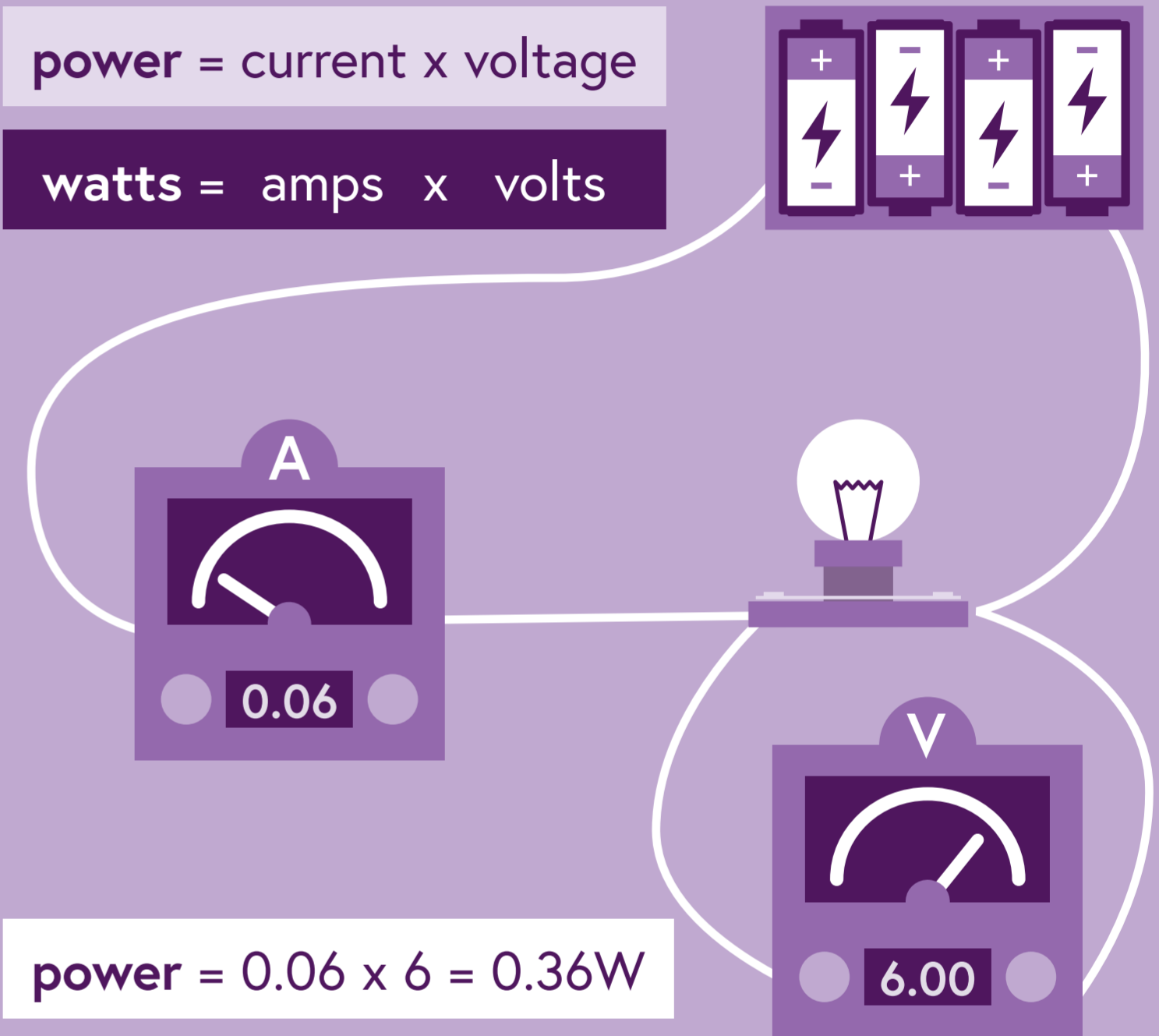
$$\text{work done} = 2,000 \times 30 = 60,000\text{J}$$

$$\text{power} = \frac{60,000}{60} = 1,000 = 1\text{kW}$$

## Electrical power

$$\text{power} = \text{current} \times \text{voltage}$$

$$\text{watts} = \text{amps} \times \text{volts}$$



1 watt (1W) means 1 joule (1J) of energy per second



500W



2kW



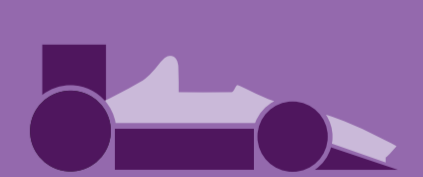
2.5kW



3kW



75kW



600kW