

Efficiency Lab

Aim: You are investigating the efficiency of different systems

SCENARIO PICKER


Filament lamp


Electric kettle


Electric motor lifting a load


Bouncing ball


Solar cell


Pulley system

SCENARIO

Filament lamp

A traditional incandescent bulb glowing on a desk.



ENERGY SUPPLIED

1,936 J

USEFUL ENERGY TRANSFERRED

137 J

New values

1. Which device do you think will be the most efficient, and which will be the least?
2. Pick the scenario you think is *least* efficient and press **New values**. Calculate the efficiency, type it in, and press **Check**.
3. Add the remaining scenarios to the results table - one row each.

4. Looking at your *Wasted (J)* column, which scenario wastes the most energy in absolute joules? Is it the same as the *least efficient* one? Explain why these two questions can give different answers.

5. Of the six scenarios, which one converts the highest fraction of input energy into the desired form, and which the lowest? Suggest a reason for the difference based on what you know about each device.

Results:

Scenario	Energy in (J)	Useful out (J)	Wasted energy (J)	Efficiency (%)	Main waste pathway