Video Notes: GCSE Physics – Efficiency

https://www.youtube.com/watch?v=7hcv_mxcA-g

Understanding Efficiency

- Efficiency measures how much _____ energy is converted into _____ energy.
- No device is 100% efficient because some energy is always lost, often as _____ or _____.

Efficiency Equation

- Efficiency can be calculated using the formula:

$$Efficiency = \left(\frac{Useful\ Energy}{Useful\ Energy}\right) * 100\%$$

- Alternatively, using power:

$$Efficiency = \left(\frac{Useful\ Power}{Useful\ Power}\right) * 100\%$$

Energy Transfer Diagram

- An energy transfer diagram shows the input energy and how it is split into useful and wasted energy.
- Example: For a light bulb, the input energy is electrical energy, the useful output is _____ energy, and the wasted energy is _____ energy.

Improving Efficiency

- Devices can be made more efficient by reducing energy losses, such as using _____ to reduce friction or improving _____ to minimize heat loss.

Practice Problem

- If a machine has an input energy of 200 J and produces 150 J of useful energy, its efficiency is:
  Efficiency = (_____ / _____) × 100% = _____%