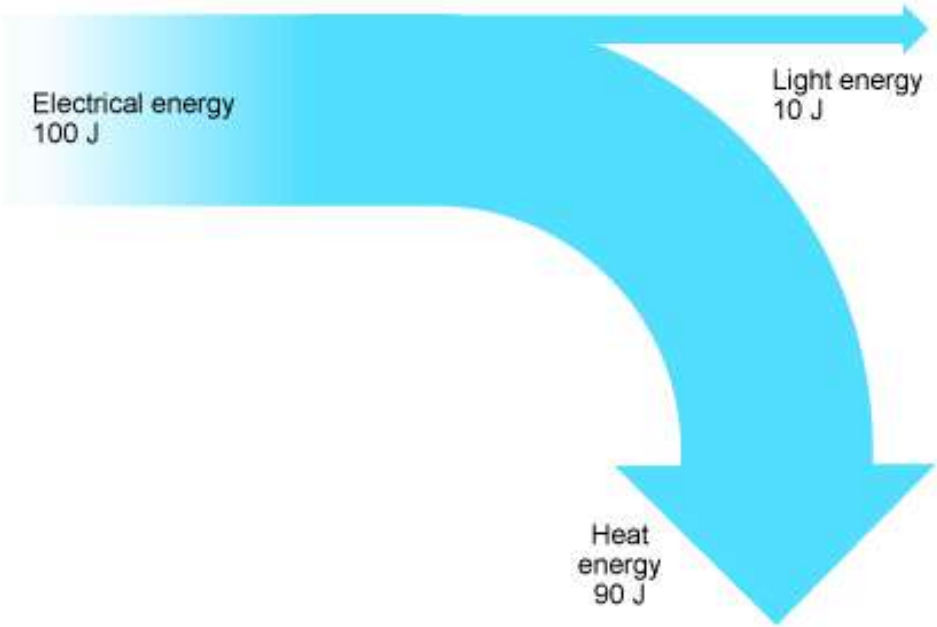
Sankey Diagrams


Electrical energy
100 J
Light energy
10 J
Heat
energy
90 J

Rules for Sankey Diagrams

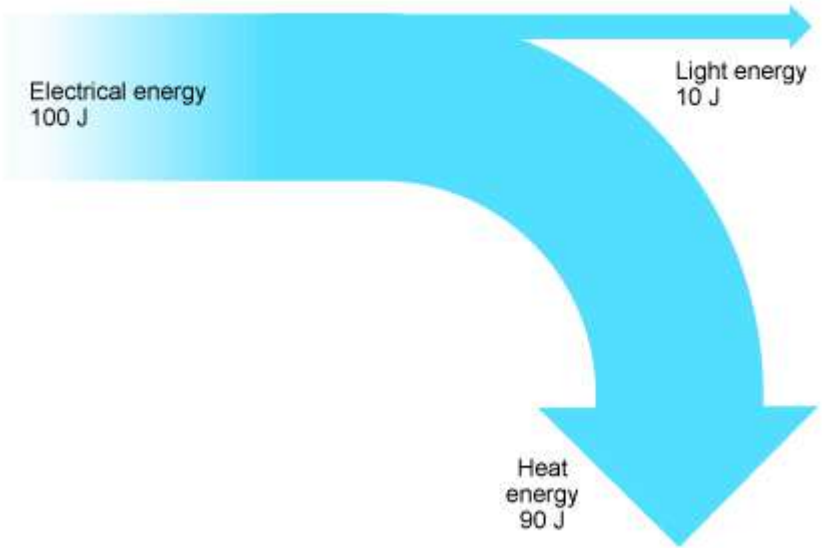
1.

2.

3.

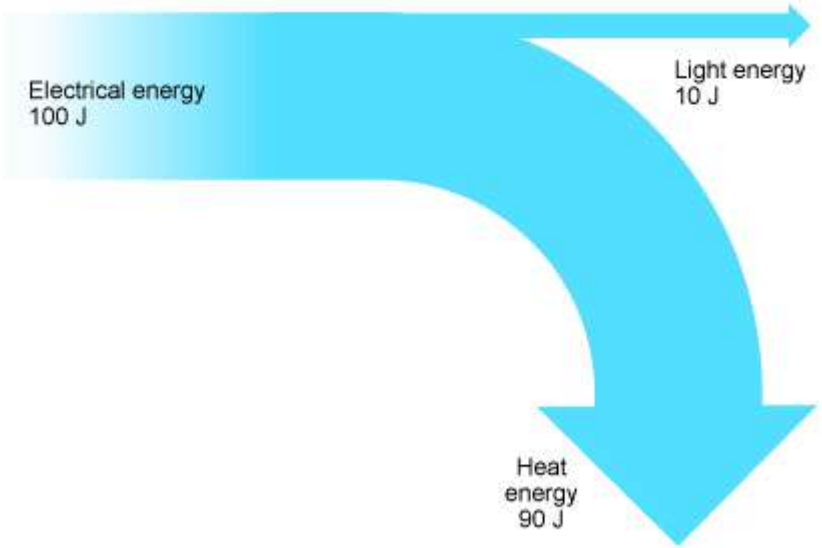
4.

Describe the situation shown in the first diagram - is this an efficient conversion of electrical energy into light?



Energy Efficiency

How efficient is this light bulb?



$$\text{Efficiency} = \frac{\text{Useful Energy Output}}{\text{Energy Input}} \times 100\%$$

Lets Try It

An LED light has 4 J of electrical energy inputted. 0.8 J of that are converted light energy. The rest of the energy is “lost” as thermal energy. Draw the sankey diagram that represents this situation. How much energy is “lost”? Calculate the Energy Efficiency of the light bulb.

Extra Practice

A washing machine has 100 J of electrical energy inputted. 48 J are converted to kinetic energy to wash the clothes. The remaining energy is lost as heat (25 J) and sound. Draw the Sankey diagram and calculate the efficiency of the washer.

To Do: for the rest of today

- Practice Sankey diagrams/energy efficiency until you feel comfortable with it
  - Quiz on sankey/energy efficiency Thursday
- Complete project packets
  - Your own work
  - Diagram must match list of transfers/conversions
  - Calculations page - need mass and height
- All project materials must be cleaned up and taken home by the end of the day

To Do: for the rest of today

- Practice Sankey diagrams/energy efficiency until you feel comfortable with it
  - Quiz on sankey/energy efficiency Thursday
- Complete project packets
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