

### **Lesson Aims:**

*All learners:*

1. Different types of energy.
2. The unit of energy.

*Most learners:*

1. Describe energy transfers in various devices.
2. Useful and wasted energy.

*Some learners:*

1. Complete all tasks.

# Starter !!

1. How do you get energy to stay alive?
2. How did you charge your phone today?
3. How do plants make food?
4. What does a car need to move?
5. How does a wind turbine power a house?
6. What do we measure energy in ?

# Types of Energy Recap

Heat	
Kinetic (movement)	
Nuclear	
Sound	
Light	
Chemical	
Electrical	
Gravitational potential	
Elastic potential	

**Device**

**Energy In**

**Useful Energy  
out**

**Wasted  
Energy**

Light bulb

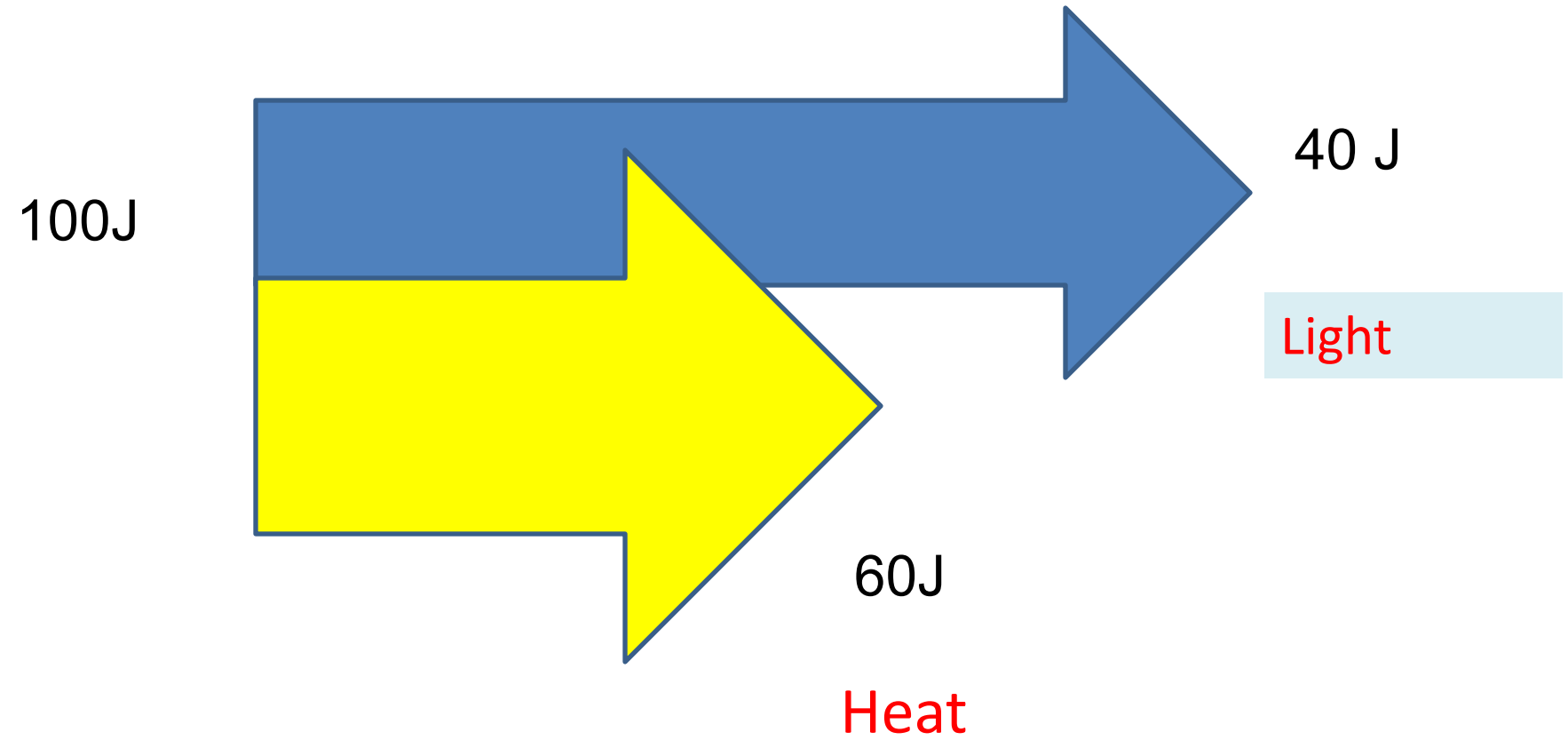
<b>Device</b>	<b>Energy In</b>	<b>Useful Energy out</b>	<b>Wasted Energy</b>
Light bulb			

## Progress Check !!

1. What energy do fossil fuels contain?
2. Where does most of the Earth's energy come from ?
3. How many joules are there in a kJ?
4. True/False: Energy cannot be created, but can be destroyed.
5. A metal bar feels cold because it takes h\_\_\_\_\_ from our hands.

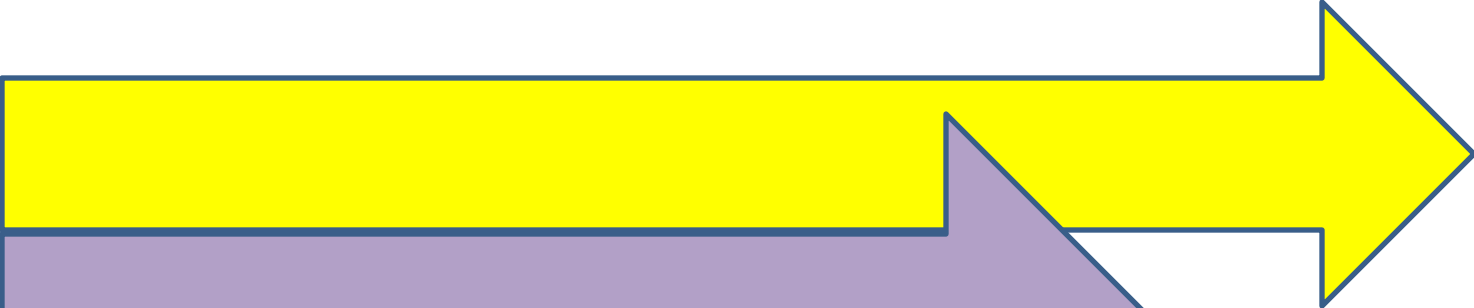
# Sankey Diagrams

Light Bulb



LED TV

Heat 10 J



45 J

Light 20 J

Sound 15 J

## Efficiency Formula

$$\text{Efficiency} = \frac{\text{Useful energy output} \times 100}{\text{Total energy Input}}$$



# Plenary

1. What does 'energy transfer' mean ?
2. What does 'useful energy' mean ?
3. What does 'Wasted energy ' mean ?

