Energy Stores and Pathways

1. Summary

The eight stores

- CHEMICAL (in food, fuel or batteries)
- KINETIC (in a moving object)
- GRAVITATIONAL (more in an object lifted above its planet)
- ELASTIC (in a stretched, squashed or twisted object)
- THERMAL (in an object at high temperature)
- MAGNETIC (in magnetic forces between magnetic poles)
- ELECTROSTATIC (in electrical forces between charges)
- NUCLEAR (in the immensely strong forces in atomic nuclei)

The four pathways

- mechanically (when a force acts and something moves)
- electrically (when a current flows)
- by heating (because of a temperature difference)
- by radiation (a wave such as light, microwaves or sound)

The central relationship

Q - How does energy move from one store to another?

A – It follows an energy pathway

2. Energy Flow Diagrams

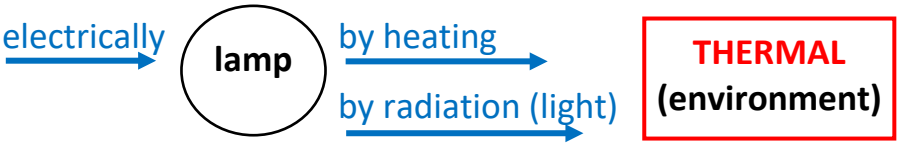
How to draw them:

Draw the energy stores as boxes: **STORE NAME**

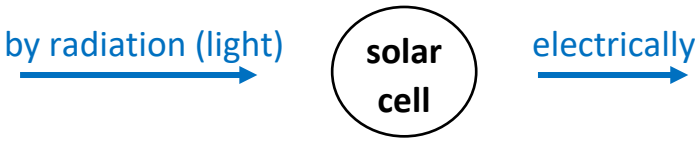
Draw the energy pathways as arrows: **pathway** →

3. Examples

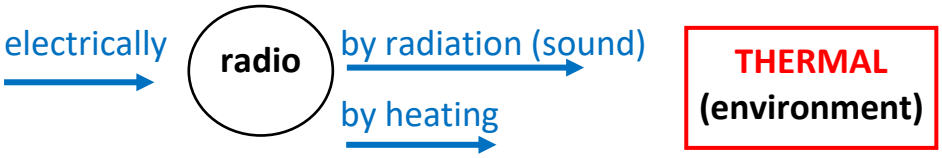
3.1. Electric Lamp



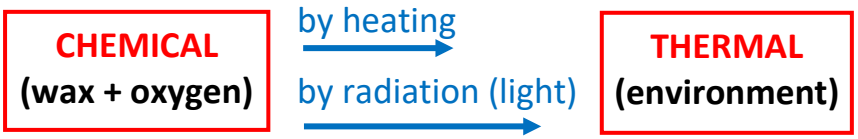
3.2. Photovoltaic (or Solar) Cell



3.3. Radio



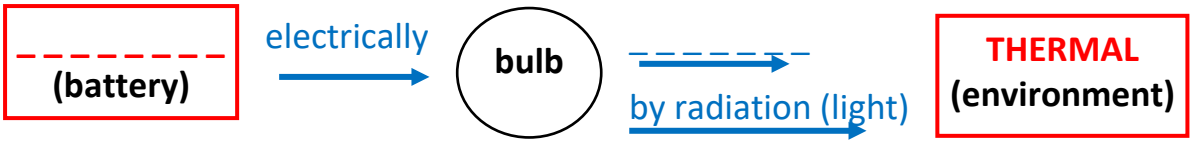
3.4. Candle



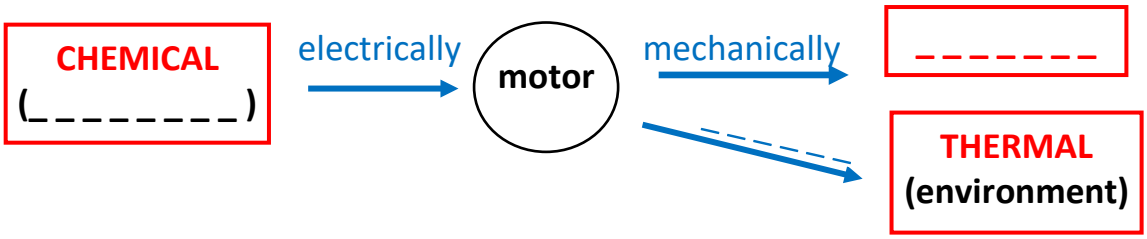
4. Exercises to complete

The following have gaps for you to add the name of the missing pathway and/or store:

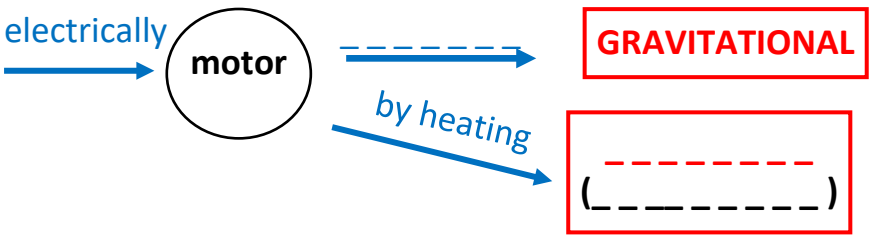
4.1. Circuit with battery and bulb



4.2. Electric car accelerating

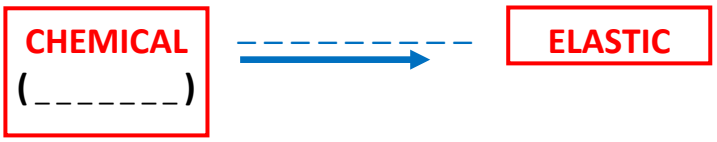


4.3. Electric motor and winch lifting a weight, constant speed



4.4. Catapult

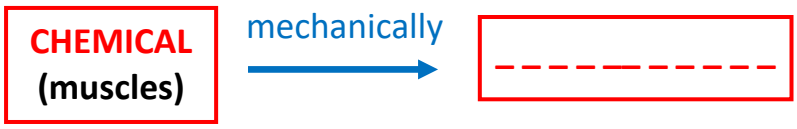
a. Being pulled back …



b. … and released

4.5. Pendulum

4.5.1. … pulling it up to start …



4.5.2. … swinging down …

4.5.3. … swinging up …

4.6. Dynamo turned by hand