Thermal Energy and Heat

Convection

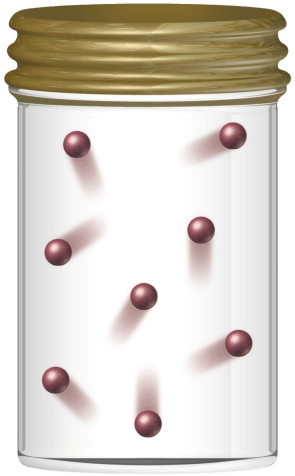
Tuesday, November 18, 2014

Why doesn’t conduction work as well in liquids and gasses?

2. Convection – the transfer of thermal energy through a liquid or gas

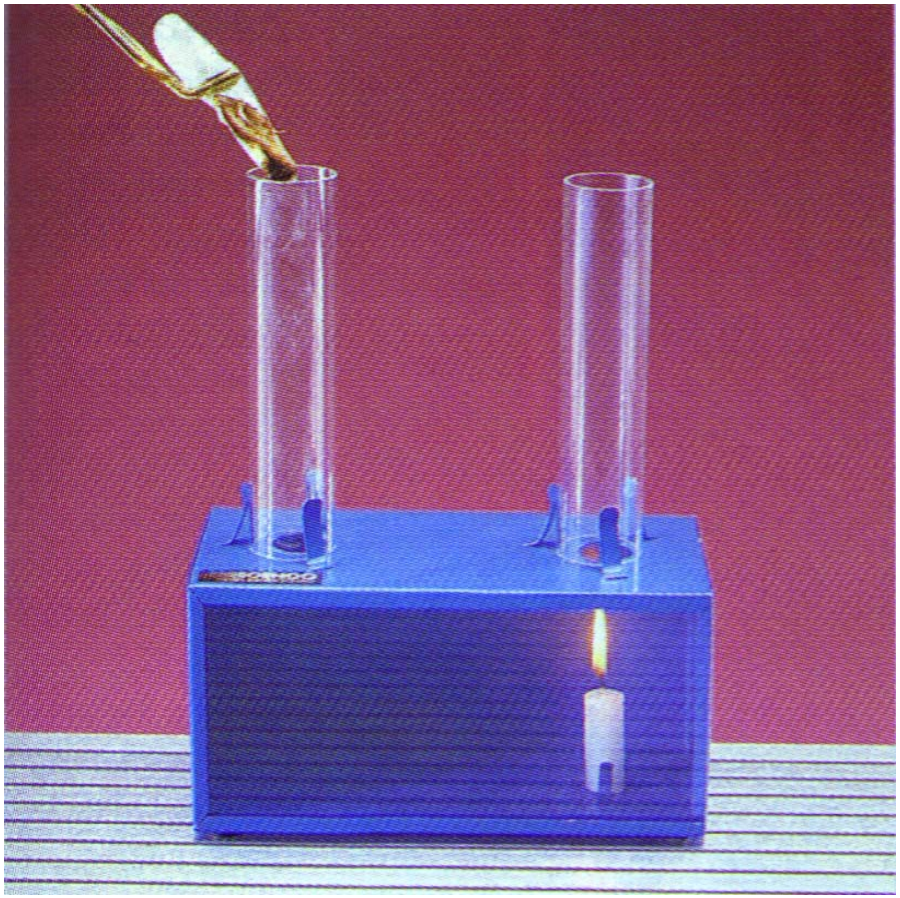
In liquids and gasses, the particles are too far apart to collide with each other to pass on thermal energy by conduction.

Instead, thermal energy moves in convection currents (which are flowing particles).



Experiment – Convection Box

Light the candle and put a smoking stick above the two chimneys and observe what happens.



Explanation

the particles above the candle:

1. gain kinetic energy,

2. move faster, and

3. spread out which

4. makes the air less dense (lighter) so

5. it rises.

6. Cool, more dense air falls into the box to replace the warm air that rose.