

Thermal Energy

We know that any moving object has kinetic energy. Microscopically, all objects are formed by atoms, and these atoms are constantly moving. Therefore, they also have energy.

Temperature is a measure of how much the atoms and molecules of an object are moving. We call this type of energy the **thermal energy**.

Thermal energy can be transferred from one body to another. We call this energy transfer **Heat**, and we use the letter Q to denote it.

$$Q = \text{Thermal energy transferred}$$

Homework

1. When water vaporizes at 100°C , the average speed of the vapor molecules is 720m/s . Calculate how much energy is stored in 1Kg of this vapor.
2. A water droplet falls from a height of $h=1,000\text{m}$ on a perfectly insulating surface (so there is no heat flowing from the droplet to the surface). How much does the thermal energy of the droplet increase after it hits the surface?

Hint: Find the potential energy of the droplet before the fall.