

Energy is the ability to do work or cause change.

*Every chemical or physical change in matter includes a change in energy.

Ex: bending a paperclip takes energy

When ice changes to liquid water, it absorbs energy from the surrounding matter.

When candle wax burns, it gives off energy.

Temperature is a measure of the average energy of random motion of particles of matter.

The particles of gas in the warm outside air have greater average energy of motion than the particles of air in a cool building.

Thermal energy is the total energy of all the particles in an object.

You experience thermal energy when you describe matter- like the air in a room- as feeling hot or cold.

Thermal energy always flows from warmer matter to cooler matter.

Ex: If you hold a cup of hot cocoa on a cold day it warms your hands.

The most common form of energy released or absorbed is thermal energy.

Ex: Ice absorbs thermal energy from its surroundings when it melts.

Endothermic change: energy is taken in

Exothermic change: energy is released.