## THERMAL PROPERTIES OF MATTER

## **TEMPERATURE AND HEAT**

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Temperature serves as a relative gauge, providing an indication of the degree of hotness or coldness in a given context. For instance, a stove displaying a heightened temperature is deemed as "hot," while an ice cube, by contrast, is associated with a lower temperature.

An object possessing a higher temperature is described as being hotter in comparison to another object with a lower temperature. The standardized unit of temperature in the International System of Units (SI) is the kelvin (K), although the degree Celsius (°C) is widely employed as a unit of temperature in everyday usage.

Consider the scenario of inserting a cold spoon into a cup of steaming hot coffee. As the spoon warms up, a simultaneous cooling of the coffee occurs, reflecting an attempt to equalize the temperatures involved. This interaction, triggering alterations in temperature, fundamentally signifies the transfer of energy from one substance to another.

The process responsible for these temperature adjustments is essentially an exchange of energy, denoted as heat flow or heat transfer. The energy transferred in this manner is referred to as heat. The metric unit for expressing the quantity of heat energy transferred is the joule (J).