

temperature:

- a measure of the average kinetic energy of the particles in a sample of matter
- does not depend on the amount of matter in the sample
- symbol is T; unit is °C

heat:

- total amount of kinetic energy that flows because of a difference in temperature
- depends on mass of sample
- symbol is Q; unit is J (1 J = 4.18 cal)

Kinetic energy is energy in motion

Potential energy is store

- Potential energy is hiding and cannot be measured
- Only changes in P.E. can be measured.

specific heat capacity:

- amount of energy required to raise the temperature of 1 gram of substance 1 °C
- symbol is c; unit is J/g°C

$$\begin{array}{ccccc}
 & \text{mass} & & & \\
 & \downarrow & & & \\
 \text{heat} \nearrow & Q = m \times C \times \Delta t & \nwarrow & & \text{change in temperature} \\
 & \text{specific heat} & & & 
 \end{array}$$

When heat (Q) is absorbed by a system, part of it (C) goes into storage as potential energy and part of it is used to make the molecules move around more, raising the temperature ( $\Delta t$ ).

Why does sand get hotter in the day and colder at night than the water?

# Note Taking Guide Episode 1301 Microwaves Answer

**Julia Schneider**



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