$$s = \frac{\Delta Q}{m \cdot \Delta T} \quad - \text{②}$$

if $m = 1\,kg$, $\Delta T = 1°C$ or $1k$ $\Rightarrow$ by Eq ② $s = \Delta Q$

"Specific heat capacity *of* the substance is the amount
of heat needed by unit mass of a substance to increase
the temperature by 1°C or 1K"

if ΔQ is small $\Delta Q = dQ$ and $\Delta T = dT$.

by ②
$$s = \frac{1}{m} \cdot \frac{dQ}{dT} \quad - \text{③}$$

SI unit of sp. heat capacity $= J\,kg^{-1}\,k^{-1}$

other unit " " " $= cal/gm-k$ or $cal\,gm^{-1}\,k^{-1}$

* sp. heat cap. depends upon temp.

②