TURBO
THERMAL PROPERTIES OF MATTER
Class 11 Physics • Complete Formula Sheet

Sr.	Concept	Formulas	Other Information
1	Temp Scales	$\frac{C}{100} = \frac{F-32}{180} = \frac{K-273.15}{100}$	Constant across all scales.
2	Thermal Expansion	$\Delta L = L\alpha\Delta T$, $\Delta A = A\beta\Delta T$, $\Delta V = V\gamma\Delta T$	$\alpha : \beta : \gamma = 1 : 2 : 3$. Rubber contracts on heating.
3	Calorimetry	$Q = mc\Delta T$ (Temp change) $Q = mL$ (Phase change)	$L_f \approx 80 cal/g, L_v \approx 540 cal/g$.
4	Conduction	$\frac{dQ}{dt} = -kA\frac{dT}{dx}$	k: Thermal conductivity.
5	Radiation	$\frac{\Delta Q}{\Delta t} = \sigma A e(T^4 - T_0^4)$	Stefan-Boltzmann Law.
6	Newton's Cooling	$\frac{dT}{dt} = -K(T - T_0)$	For small temp differences.
7	Wein's Law	$\lambda_m T = b$	$b \approx 2.89 \times 10^{-3} m \cdot K$.