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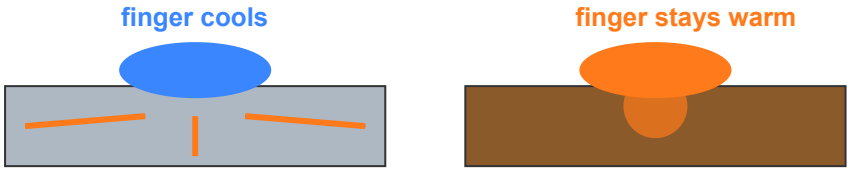
Why Metal Feels Colder than Wood

1. The puzzle

On a winter morning a steel railing feels icy while a wooden bench beside it does not. Yet a thermometer shows **both at the same temperature** (say 10 °C): objects left together reach the temperature of their surroundings (thermal equilibrium).

2. What skin really senses

Skin (about 33 °C) does not measure temperature directly. It senses **how fast heat flows** out of it (or into it).



METAL: heat races away

WOOD: heat stays put

3. Conductors and insulators

Material	Thermal conductivity (W/m·K, approx.)
Copper	400
Aluminium	205
Steel	15–50
Glass	1
Wood	0.1–0.2

Metal is a good **conductor**: it pulls heat from the fingertip and spreads it through the bar, so the skin cools quickly and feels cold. Wood is an **insulator**: heat leaves slowly and the touched spot soon warms to near skin temperature, so it does not feel cold.

4. The twist

On a hot afternoon (say 45 °C) the same metal feels **hotter** than wood: now heat flows into the skin, and metal delivers it much faster.

Solved example

Q. Why does a tiled floor feel colder than a carpet in the same room?
A. Both are at room temperature, but tile conducts heat away from the feet much faster than carpet (an

insulator), so the feet lose heat quickly and the tile feels colder.

Practice questions

1. (MCQ) Metal feels colder than wood because it (a) is colder (b) conducts heat away faster (c) absorbs cold (d) is heavier
2. (Very short) Name one good conductor and one insulator of heat.
3. (Short) Why do cooking pans have wooden or plastic handles?
4. (Short) Why does metal feel hotter than wood on a hot day?
5. (True/False) A thermometer touching the railing and the bench in the same place reads different values.
6. (Short) What does the skin actually sense when we touch an object?

Answer key

1. (b).
2. Conductor: copper (any metal); insulator: wood (or plastic, air).
3. The handle material conducts heat slowly, so it stays cool enough to hold.
4. Metal conducts heat into the skin faster than wood.
5. False: both are at the same temperature.
6. The rate of heat flow out of or into the skin.

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