

Hot and Cold - A Relative Sense

Chapter 7: Temperature and its Measurement · Topic 1

Key Concept

This experiment proves that touch alone cannot give an accurate, consistent temperature reading, which is why scientists rely on measuring instruments like thermometers instead of relying on their sense of touch. This is an important scientific principle: personal senses can be biased or inconsistent, so objective, measurable instruments are needed for reliable, comparable results in any experiment.

Quick Revision Notes

- Touch is a relative sense and can give misleading temperature judgments.
- The three-bowl (hot/cold/room-temperature water) experiment demonstrates this unreliability.
- The same room-temperature water can feel warm to one hand and cool to another, depending on prior exposure.
- Scientific measurement uses instruments like thermometers instead of relying on touch.

Practice Questions

- 1 Describe the three-bowl experiment showing why touch is unreliable for measuring temperature.
- 2 Why is it important for scientific measurements to be objective rather than based on personal senses?
- 3 Predict what would happen if you touched ice and then touched lukewarm water.