



## PUZZLE

### TEMPERATURE AND HEAT

#### **Scenario:**

You have two identical glasses. In the first glass (Glass A), you place 100 ml of water at  $20^{\circ}\text{C}$ . In the second glass (Glass B), you place 100 ml of water at  $40^{\circ}\text{C}$ . You then drop an identical ice cube into each glass simultaneously.

#### **Questions:**

1. In which glass will the ice cube melt faster, Glass A or Glass B? Explain your reasoning.
2. Will the final temperature of the water in Glass A be higher or lower than the final temperature of the water in Glass B? Explain your reasoning.
3. Assume the ice cube in Glass A melts completely, and the final temperature of the water in Glass A is  $5^{\circ}\text{C}$ . If you were to add another identical ice cube to Glass A, what would you expect to happen to the temperature of the water?
4. If the ice cube in Glass B melts completely, will the final temperature of the water in Glass B be above or below  $20^{\circ}\text{C}$ ? Explain your reasoning.