

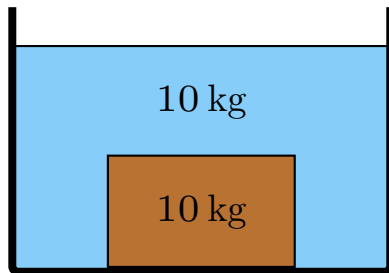
Warm Up Question 1

Two pieces of aluminum are initially at temperature 20°C . One piece, labeled A, has mass 10 kg and another piece, labeled B has mass 20 kg. Both are heated to a temperature of 40°C . How does the heat supplied to A compare (same, smaller, larger, ...) to that supplied to B to raise the temperature as described? Explain your answer.

1. Smaller for A. Less mass.
2. Same for A. The temperature change is the same.

Question 1

A 10 kg piece of copper (heat capacity 385 J/kg K) is placed in contact with 10 kg of ethyl alcohol (heat capacity 2400 J/kg K), initially at a lower temperature than the copper.



During the first few seconds in which they are in contact the copper supplies 2000 J of heat to the alcohol. Which of the following is true during this period?

1. $|\Delta T_{\text{copper}}| = |\Delta T_{\text{alcohol}}|$
2. $|\Delta T_{\text{copper}}| > |\Delta T_{\text{alcohol}}|$
3. $|\Delta T_{\text{copper}}| < |\Delta T_{\text{alcohol}}|$

Warm Up Question 2

A block of aluminum and a block of copper each have the same mass and are at a temperature of 200°C . Two beakers each contain the same amount of water at a temperature of 30°C . The copper is placed in one beaker and the aluminum in the other. The temperature of each beaker of water is observed to change, and each eventually reaches equilibrium. In which case will the water's temperature rise the most? Explain your answer.

1. Aluminum. Higher heat capacity.
2. Copper. Higher heat capacity.
3. Copper. Lower heat capacity.
4. Same.