

### Specific Heat and Heat Capacity Worksheet

1. The temperature of 335 g of water changed from 24.5°C to 26.4°C. How much heat did this sample absorb?  $c$  for water = 4.18 J/g°C (ans. 2.66 kJ)
2. How much heat in kilojoules has to be removed from 225g of water to lower its temperature from 25.0°C to 10.0°C? (ans. -14.1 kJ)
3. To bring 1.0kg of water from 25°C to 99°C takes how much heat input? (ans. 309 kJ)
4. An insulated cup contains 75.0g of water at 24.00°C. A 26.00g sample of metal at 82.25°C is added. The final temperature of the water and metal is 28.34°C. What is the specific heat of the metal? (ans 0.971 J/g°C )
5. A calorimeter has a heat capacity of 1265 J/°C. A reaction causes the temperature of the calorimeter to change from 22.34°C to 25.12°C. How many joules of heat were released in this process? (ans. 3.52 kJ released )
6. What is the specific heat of silicon if it takes 192J to raise the temperature of 45.0g of Si by 6.0°C? (ans. 0.71 J/g°C)