

QUESTIONS TO HAND IN-EXPERIMENT 9

NAME _____

LAB INSTRUCTOR _____ LAB DAY/TIME _____

1. The specific heat of a particular substance is a measure of how much heat energy it takes to raise a unit mass of it by 1 C° . The specific heat of water is $4,186\text{ joules/kg-C}^\circ$. How much heat does it take to raise 1 kg of water by 10 C° ?
2. Sand on the beach has a specific heat that is about 10 times smaller than that of water. If 1 joule of heat energy is absorbed by equal masses of sand and water, which one will have the higher final temperature and why?
3. A quantity of cream at $10\text{ }^\circ\text{C}$ is poured into a cup of steaming hot coffee at $90\text{ }^\circ\text{C}$. Explain the heat exchange that goes on as they are mixed.
4. In the situation of Question 3 above, in what temperature range do you expect the final temperature of the mixture to lie?
5. If the cream and the coffee are initially both at the same temperature, how much heat is exchanged?