Thermal Energy Worksheet (p. 1)
Honors Physical Science
Show "K-U-E-S" on your own paper where necessary. Otherwise answer completely on your own paper.

1. A 10.0 g piece of copper wire, sitting in the sun reaches a temperature of 80.0°C. How many Joules are released when the copper cools to 40.0°C? The specific heat capacity of copper is 0.377 J/(g·°C).

2. The specific heat capacity of water is 4.184 J/(g·°C). How much thermal energy is required to change the temperature of 700.0 g of water from 25.6°C to 75.4°C?

3. How much thermal energy is released when a 201 g piece of blown glass at an initial temperature of 150°C is cooled to 25°C? The specific heat capacity of glass is 0.837 J/(g·°C).

4. If 2077 J are released to change the temperature of a block of ice initially at a temperature of -20°C to 0°C, find the mass of the ice. Ice has a specific heat capacity of 2.077 J/(g·°C).

5. Mercury has a specific heat capacity of 0.139 J/(g·°C). How many Joules are required to change the temperature of a 50.0 g sample of Mercury from 20.7°C to 100.4°C.

6. A balloon is filled with 0.5 g of air, which has a specific heat capac[illegible]

Conduction: Convection: Radiation:

8. An insulator is something that prevents or slows the transfer of heat. List three in
sulators.