A-Day: Due Mon., Jan 8 (Assigned: 1/4)
B-Day: Due Tues., Jan 9 (Assigned: 12/6)

Heat 1

1) Conduction (1), Convection (2), or Radiation (3)?
   A. ____Your hand gets warm while underneath (but not touching) a hot pot of water.
   B. ____Your hand cools down when pushed against the metal on your desk.
   C. ____Why smoke rises above a campfire.
   D. ____Molecules bumping against each other.
2) Use this picture to answer the following:

30ºC	60ºC

   A. Use an arrow to show which way heat will move.
   B. Is the object at thermal equilibrium?
   C. Which object will lose heat?
   D. Which object will gain heat?
   E. Which object has a negative ΔQ?
   F. Which object has a positive ΔQ?
   G. How does the amount of Q gained or lost compare?
3) From the lab:
   A. Which dropped temperature faster when put into the room temperature water: the tin can or the glass beaker?
   B. Why?

   C. Which gained temperature faster in the heat lamp: the black can or the white can?
   D. Why?

4) You put ice into a cup of hot chocolate. The ice gives its cold to the liquid. Yes or no and why?

5) An object is at 35ºC. Convert this temperature to the Kelvin scale.

6) Convert 80ºF to Celsius.

7) How much heat is necessary to raise 15 kg of water from 20ºC to 40ºC? (C_p of water = 4186)

8) Using the same mass and temperature change as before for copper (C_p of copper = 387).

9) How much heat is necessary to boil 15 kg of water? (Lv of water = 2.26×10^6)

10) Use Q7-9 to answer the following:
    A. Does it take more heat to raise the temperature of copper or water?
    B. Did it take more heat to raise the temperature of water or to change it to a gas?
    C. So, if the c_p of iron = 448 and c_p of aluminum = 899, which one will require the most Q to change its temperature?
11) Which part of the desk feels colder: the metal or the wood?
12) Which one is actually colder: the metal or the wood?
13) Why do they feel different?

14) Does Q have to go into or out of water as it changes from liquid to gas?
15) When your hand is wet and you blow on it, does your hand feel hot or cold?
16) So, when water freezes, does it give off heat or absorb heat?
17) Why, then, do citrus growers in Florida spray water on their fruit to protect it from freezing weather?

More on back

Fill in the blanks to help you better understand states of matter vocabulary. Remember that there may not be the correct number of blanks for each vocabulary word.