Name: _____

T-1

Simple Thermochem Conversion problems...

1. Fruit Loops cereal is excellent (that's qualitative). A serving of 38 grams contains 125 Calories. Convert that amount of energy into calories, joules, and kJ.

2. Cashews are my favorite nuts. A serving is 28 grams and it contains 165 Calories. How many Calories, calories, joules, + kJ are in *one handful* - 64.0 grams?

3. How many joules need to be absorbed by 346.0 grams of ice at 273K to melt?

4. If you touch 2.90 grams of steam and it all condenses onto your hand, how many joules of energy are released as this steam changes phases?

Name: _____

T-2

Definitions and more math…

1. Define the following terms: thermo-chemistry, energy, law of conservation of energy, exothermic, endothermic, calorie, Calorie, and specific heat capacity.

2. In the three basic heat formulas, what do the q, m, C, ΔT, H_F and H_V represent?

3. If 870. Joules of heat is added to 6.8 grams of olive oil at 294 K, the temperature rises to 358 K. What is the specific heat of olive oil? (solve for C)

4. How much heat in Joules is required to raise the temperature of 454 grams of Hg from 293 K to 323 K? (the specific heat of Hg = 0.140 J/g·K)

5. How much heat in Joules is required to raise the temperature of 454 grams of water from 293 K to 323 K? (the specific heat of water is 4.18 J/g·K)

Name: _____

T-3

The specific heat capacity for copper is 0.390 J/g·K

1. How many joules does it take to raise the temperature of a piece of copper that is 307 grams and at 298 K, until is warms to 327 K?

2. How much energy does it take to warm up 50.0 mL of pure water from 281.5 K to 289.9 K?

3. The "C" of "Hg" is 0.140 J/g·K. How much heat is lost from 356 grams of mercury when it changes temperature from 369 K to 305 K?

4. If 4675 Joules are absorbed by 315.0 grams of unknown metal at 270.4 Kelvin and the metal temperature rises to 312.2 Kelvin, what is the specific heat capacity constant for this metal?

Name: _____

T-4

Draw a bomb calorimeter

1. Write a paragraph explaining how it works. (on the back)

2. 102 ml of pure water at 278 K is heated with 38,780 Joules of heat energy. What is the final temperature of this water?

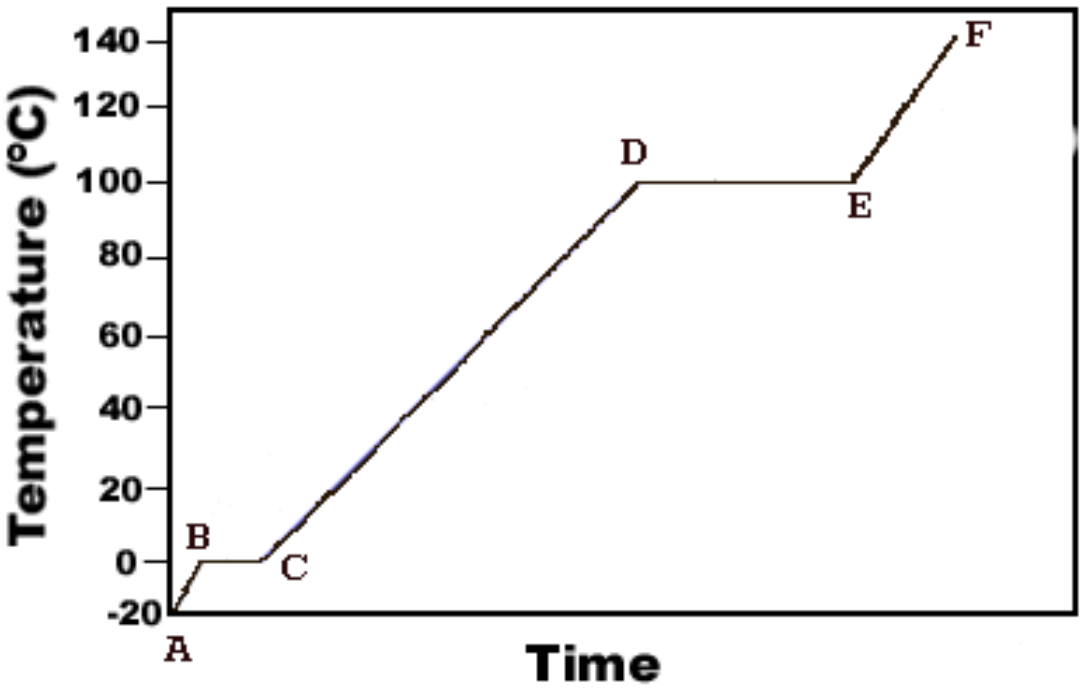
T-5

Name: _____

More Thermo-Chem Problems

1. Using the heating curve for water below, write increasing, decreasing or steady for each box for the temperature, kinetic energy, and potential energy.

	Phase	Temp	KE	PE	Formula used in a thermochem problem
BC					
CD					
EF					



2. Why is BC shorter than DE? Use the numbers 334 & 2260 in your answer.

3. What formula do you need to use if your problem says move some H_2O from point D to point E?

4. What formula do you need to use if your problem says move some H_2O from point C to point D?