

NAME:

## HONORS CHEMISTRY

SECTION:

### Energy Assignment Sheet

Assignment	Due Date
1. §Complete formal lab report for <i>Calculations with a Chemical Reaction</i>	Friday, 12/14
2. §Read pp. 289-292; create a concept map using key terms from these pages	Monday, 12/17
3. §Complete p. 317 #7-14	
4. §Handout	Tuesday, 12/18
5. §finish lab handout for Heat of Fusion of Ice minilab (data, questions)	Wednesday, 12/19
6. §Complete p. 319 #45-48	Thursday, 12/20
7. §Read sections 10.8 and 10.10 in textbook; write a 5-8 sentence summary	
8. Finish lab handout for Enthalpy of Combustion of Wax lab	Friday, 12/21
9. §Read section 10.4, Complete p. 317 #15-20, p. 320 #79	Thursday, 1/3
10. §Handout	
11. Complete the Gibb's Free Energy tutorial (chapter 13) <a href="http://www.wwnorton.com/college/chemistry/chemistry3/ch/14/chemtours.aspx">http://www.wwnorton.com/college/chemistry/chemistry3/ch/14/chemtours.aspx</a>	Friday, 1/4
12. §Complete pp. 319-320 #59-65, 80, 82	Monday, 1/7
13. *Hess' Law prelab questions (in Google Classroom)	
14. Start work on Energy unit alternative assessment	
15. §Energy unit alternative assessment	Friday, 1/11
13. §Hess' Law Minilab (data, questions, conclusion)	Monday, 1/14

#### Dates to Remember:

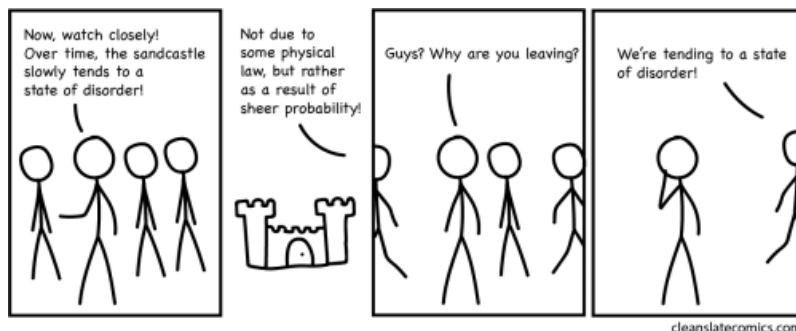
Energy Unit Alternative Assessment Friday, 1/11

§may be checked or collected in class

\*may be checked online

#### After studying chapter 10 you should be able to:

- State the general properties of energy.
- Define and give examples of state functions.
- Compare and contrast temperature and heat.
- Compare and contrast endothermic and exothermic processes.
- Describe in words and diagrams the heat changes that occur in melting, freezing, boiling, and condensing, and calculate the heat changes involved.
- Calculate the heat changes that occur in chemical and physical processes.
- Apply Hess' Law of heat summation to find heat changes for chemical and physical properties.
- State two reasons why reactions occur.
- State the reasons that enthalpy changes occur in chemical reactions.
- Calculate enthalpies of formation and use them to calculate enthalpies of reaction.
- Explain how the quality of energy changes as it is used
- Describe and give examples of changes in entropy.
- Calculate Gibb's free energies, and relate Gibb's free energy to the spontaneity of reactions.



## Entropy [OC]

### Some Useful Websites:

<http://hyperphysics.phy-astr.gsu.edu/hbase/thermo/spht.html> specific heat and energy calculations

<http://www.chemteam.info/Thermochem/Determine-Specific-Heat.html>

<http://www.iun.edu/~cpanhd/C101webnotes/matter-and-energy/specificheat.html> What is specific heat?

<http://www.kentchemistry.com/links/Energy/HeatFusion.htm>

<http://www.kentchemistry.com/links/Energy/HeatVaporization.htm>

<http://www.science.uwaterloo.ca/~cchieh/cact/c123/heating.html> Heating and cooling curves

<http://www.ck12.org/chemistry/Heating-and-Cooling-Curves/lesson/Heating-and-Cooling-Curves/>

<http://chemsite.lsrhs.net/AtomsInMotion/HeatVsTemp.html> Heat vs. temperature

<http://www.chem.wisc.edu/deptfiles/genchem/netorial/modules/thermodynamics/chemical/chemical3.htm>

#### Thermochemical equations

<http://science.widener.edu/svb/tutorial/thermoequationscsn7.html> Thermochemical equations practice

<http://www.science.uwaterloo.ca/~cchieh/cact/c120/hess.html> Hess' Law overview

<http://www.chem.wisc.edu/deptfiles/genchem/netorial/modules/thermodynamics/chemical/chemical5.htm>

#### Enthalpies of formation

<http://www.chemteam.info/Thermochem/HessLawIntro2.html> Enthalpies of formation

[https://chem.libretexts.org/Core/Physical\\_and\\_Theoretical\\_Chemistry/Thermodynamics/State\\_Functions/Enthalpy/Standard\\_Enthalpy\\_Of\\_Formation](https://chem.libretexts.org/Core/Physical_and_Theoretical_Chemistry/Thermodynamics/State_Functions/Enthalpy/Standard_Enthalpy_Of_Formation)

<https://www.youtube.com/watch?v=870y6GUKbwc> Entropy introduction

<http://www.bioinfo.org.cn/book/biochemistry/chapt13/sim1.htm> Bioenergetics

<http://www.wwnorton.com/college/chemistry/chemistry3/ch/05/chemtours.aspx>

Chapter 5: State Functions, Heating Curves, Hess' Law, Calorimetry

<http://www.wwnorton.com/college/chemistry/chemistry3/ch/14/chemtours.aspx>

Chapter 14: Entropy, Gibb's free energy

