Study Guide or: How I Learned to Stop Worrying and Love Thermochem

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| **Given?** | **Asked to find?** | **Use:** |
| 1. A reaction **with** ΔH (kJ/mol)
2. **Either**:
	1. g or mol of a substance
	2. energy change (J or kJ)
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	1. g or mol of a substance
	2. energy change (J or kJ)
 | **Stoich!** Don’t forget to convert between moles of your substance of molesrxn |
| 1. A reaction **without** ΔH (kJ/mol)
2. A lot of bond energies
 | ΔHrxn | 1. Draw the Lewis structures.
2. Use the following:

ΔHrxn = Σ(BEreactants)− Σ(BEproducts) |
| 1. A reaction **without** ΔH (kJ/mol)
2. A lot of heats of formation (ΔHf)
 | ΔHrxn | ΔHrxn = ΣΔHf (products)− ΣΔHf (reactants) |
| 1. A reaction **without** ΔH (kJ/mol)
2. Multiple reactions **with** ΔH
 | ΔHrxn | **Hess’s Law!** Rearrange the equations to make the goal equation, then combine your new ΔH’s |
| 1. A phase change (vaporizing, condensing, freezing or melting)
2. ΔHvap orΔHfus
 | Energy change (heat absorbed or released) | q = nΔH |
| 1. A temperature change
2. Mass or moles of a substance
3. Heat capacity ( $\frac{J}{g ℃}$ or $\frac{J}{mol ℃}$ )
 | Energy change (heat absorbed or released) | q=mC ΔT(or q=nC ΔT for molar specific heat) |