

"The Chef" Worksheet

- Write a balanced chemical equation for the reaction of calcium oxide and water to produce calcium hydroxide. *Hint:* If the solubility of calcium hydroxide in water is only 1.6 g/L, what is the state of the major product?
- Use Hess's Law to express the heat of reaction for this equation in terms of the heats of formation of the reactants and products.
- Use the following information to calculate the heat of reaction.

Chemical	Heat of Formation (kJ/mole)	F.W. (g/mole)
CaO(s)	- 635.1	56.08
Ca(OH) ₂ (s)	- 986.1	74.10
Ca(OH) ₂ (aq)	- 1002.8	74.10
H ₂ O(l)	- 285.8	18.02

- Assuming 100 g of calcium oxide was used in this demonstration and it was completely converted into calcium hydroxide, how much heat was produced?