# The Cooling of Metals

Imagine you have samples of the metals aluminum, copper, gold, and silver. Each sample is in the form of a cube with linear dimensions of 1 cm and is suspended by a thread from a wood dowel. The metals, which are initially suspended in air at a temperature of 25 $^{o}$C, are placed in a beaker of boiling water where they remain until the water returns to a boil. All four metals are now at a temperature of 100 $^{o}$C. If you remove the cubes of metal and place them on a block of ice, which metal will melt the most ice? In completing this worksheet assume that no heat is lost in other ways.

Before developing a formal solution to this problem, make an educated guess based on anything you might know about the properties of these metals; personal experiences with these metals might be helpful in formulating your guess. Place your answer here and briefly explain the reasoning behind your answer.

Now that you've made an educated guess, try to develop a more quantitative approach to this problem using one or more ideas from our last class. Use the web site *Chemicool* (available from the Chem 260 Tools page) to find any information that will help you in developing your answer.

How good was your educated guess? If you guessed correctly, did you do so for the right reason(s)? If you guessed incorrectly, what factor(s) did you not include in developing your guess?