We say a graph (or hypergraph) has a *prime labeling* if its vertices can be labeled by the numbers $1, 2, \ldots, |V|$ so that the labels on each edge are coprime. Thus the problem: given a graph (or hypergraph), is there a prime labeling? In this talk, we will give a bit of background on the problem and will discuss a couple of our results. First, we will discuss the associated threshold problem for a couple of models of random graphs. We will also discuss the fact that essentially all $k$-partite $k$-uniform hypergraphs are not prime and why this may (or may not) be surprising. (Received January 29, 2019)