

1014-Z1-1539 **Brian P Kelly*** (kelly@ulm.edu), Dept. of Math and Physics, ULM, Monroe, LA 71201. *Using Discovery Activities to Teach Mathematical Induction.*

Simple map coloring problems allow students to explore examples visually and form suitable conjectures. We first examine a special class of maps and discuss how to use the principle of mathematical induction to prove that these maps can all be map colored with two colors.

This provides an application of mathematical induction that is less mechanical than the standard summation examples. Furthermore, we are able discuss how to re-evaluate the proof in order to prove generalizations of the result.

We will also show how examining the Towers of Hanoi puzzle provides a context for a computational application of mathematical induction. (Received September 28, 2005)