

1086-D1-2677 **McKenzie Russell Lamb*** (lambm@ripon.edu), 300 Seward Street, PO Box 248, Ripon, WI 54971. *Using Turing Machines to Level the Playing Field in a Math for Liberal Arts Course*. Preliminary report.

One of the primary challenges of teaching math for liberal arts courses lies in dealing with the wide range of ability levels and backgrounds of the students in these classes. Finding topics that are simultaneously accessible to the weakest students in the class and challenging to the strongest is difficult. I will describe my attempts to use ideas from the theory of computation (finite automata, Turing machines, etc) to accomplish this. In particular, I will discuss using finite automata to motivate mathematical induction, using regular languages to motivate proof by contradiction, and using the notion of language recognition to motivate cardinality. I will also describe some activities that lead students to discover and develop these ideas on their own. The title of the course I am teaching using this scheme is "Mathematical Thinking and Writing." Therefore, the activities will emphasize using this circle of ideas to practice both formal and informal exposition of mathematical concepts. (Received September 25, 2012)