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J. Winston Crawley* (jwcraw@ship.edu), Dept. of Mathematics, Shippensburg University,
1871 Old Main Dr., Shippensburg, PA 17257, and **Douglas E Ensley** (deensl@ship.edu).

Induction: It's Only Natural.

In this talk we address several teaching strategies we have devised to help students master proof by induction, and the recursive thinking that underlies this proof method. The "standard" method of teaching induction contains several potential stumbling blocks. Our teaching strategies have evolved in an effort to remove or alleviate these stumbling blocks. We discuss mental, paper-and-pencil, and computer-assisted exercises we have developed to assist students in understanding the reasoning that underlies induction. With these strategies, induction seems "only natural" to almost all the students in our freshman-level discrete math course. (Received September 19, 2007)