

1135-Q1-884

Sarah J Greenwald*, Department of Mathematics, Appalachian State University, Boone, NC 28697. *Breakthroughs and Controversies in Science and Mathematics: Standards-based Learning in a First-Year Seminar*. Preliminary report.

Want to engage students with mathematical topics in a fun, creative, and intellectually stimulating environment? We employ standards-based learning and delve into diverse and opposing viewpoints on many issues. We focus on what science and mathematics is, strategies for success in these fields, ethical and philosophical considerations, public perceptions, and applications to daily tasks. We also explore a series of interrelated questions about proof and certainty: What is truth? When are we convinced? What are the consequences of certain truths? What is the role of chance and probability? The students choose many of the topics we cover, so they feel a sense of shared ownership in the material as they work toward meeting the course learning goals. The goals are broad and center around critical and creative thinking, effective communication, local to global connections, and the responsibilities of community membership; students must examine a single issue from multiple perspectives, learn to conduct quality research, and analyze the arguments of others as they make connections with students, faculty and the university. We will share the reasons why students choose to take this specific section along with the difficulties and great rewards of teaching it. (Received September 16, 2017)