1078-97-250 **Erica L Johnson*** (ejohnson@sjfc.edu), St. John Fisher College, Dept of Mathematical & Computing Sciences, 3690 East Avenue, Rochester, NY 14618. *Making and breaking codes: Something for everyone.* Preliminary report.

The art and science of encoding and decoding secret messages has intrigued humanity for millennia. Students are no exception. The mathematical content is appropriate for a variety of ages and mathematical backgrounds. A modern method, RSA, a form of Public Key Encryption, is an application of modular arithmetic that has its roots in Number Theory. Number Theory is a subject that is rife with opportunities for students to engage in inquiry-based learning, mathematical proof and reasoning, and problem solving. The mathematical content behind RSA builds off of elementary school content and is an extension of high school curriculum that also speaks to the infamous question, "Where are we ever going to use this?" Technology is an integral part of current encryption methods and can be harnessed to foster student understanding. In this talk, we will present and/or recreate several encryption methods used through history culminating in RSA, a form of Public Key Encryption, a method which is currently in use today. Additionally the mathematical, curricular, and pedagogical utility of said encryption methods will be discussed. (Received December 10, 2011)