A popular way for liberal arts students to fulfill their mathematical reasoning general education requirement at my institution is by taking an elementary cryptology course. In this presentation I will describe the final project used to assess student learning in that course. The project involves cryptanalysis of three messages whose decipherments rely on the students’ ability to determine the nature of the cryptographic scheme as well as the key(s) employed to encipher each. I will describe the learning objectives of the course, the mathematical knowledge that students need to bring to bear on this challenge, the rubric used to appraise the students’ level of mastery of the course material, and finally assessment. (Received September 01, 2011)