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The ubiquity of digital signals in our technological society helps to drive advances in computational modeling and the use of computational software such as MATLAB. For undergraduate students, modeling and analyzing student generated sound waves is a great way to gain a better appreciation for applications of calculus and the use of MATLAB. In this presentation we share classroom projects that utilize microphones, Audacity and MATLAB for the purpose of capturing and displaying student voice waves and analyzing their frequency content; and for exploring signal processing applications such as JPEG and MP3 compression. (Received September 12, 2012)