## ACOUSTICS2008/3312 Investigating musical sound as a model for the scientific process

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In recent years, science pedagogy at all levels has embraced active student learning, in which students are engaged in the process of discovery, rather than passively receiving information. One of the benefits of active learning in a science curriculum is that students have an opportunity to emulate scientists in their approach to producing knowledge. It is desirable that students at all levels, including those in primary and secondary schools, develop an understanding of (or at least an appreciation for) the scientific process, in addition to learning science content. Presented here is a description of a musical acoustics curriculum used at Central Washington University for non-science students, with emphasis on how the structure of the curriculum and the active-learning elements contribute to accomplishing the objectives of conceptual learning, problem-solving ability, and scientific thinking. An essential feature of this curriculum is the combination of guided and open scientific investigations by teams of students. Portions of this college curriculum have been successfully adapted to the high school classroom and to audiences of children as young as ten years of age. Because musical acoustics incorporates many fundamental topics in physics and engineering, and it is appealing and relevant to students of all ages, this topic can be a significant asset to any science curriculum.