



Yale-New Haven
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Curriculum Units by Fellows of the Yale-New Haven Teachers Institute
2000 Volume V: Sound and Sensibility: Acoustics in Architecture, Music, and the Environment

Sounding Off About Trig

Guide for Curriculum Unit 00.05.09
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The unit, "Sounding Off About Trig," takes the overarching theme of sound and applies it to various aspects of algebra and trigonometry. While the unit is designed to supplement a Pre-Calculus textbook, there are parts that may be adaptable to an Algebra II/Trigonometry class. I have created short activities that can be applied in different places of the curriculum. This enables teachers to either use individual activities of this project to enrich a concept or they can use all the activities as a cohesive unit.

Because most students learn best when they can put their hands around what they are learning, the activities are very "hands-on." In one activity students are asked to create a musical octave using bottles. All the activities ask students to use technology or musical instruments. The activities deal with concepts of sine waves including phase shift, amplitude, period, and addition of ordinates. In addition, sound concepts such as frequency, wavelength, and Helmholtz resonators will also be addressed. In any given activity, both sound and math objectives will be addressed. Thus, "Sounding Off About Trig" asks students to integrate their knowledge of mathematical skills with their understanding of sound.

(Recommended for Algebra II, Trigonometry, and Physics, grades 9-12.)

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