



Yale-New Haven
Teachers Institute®

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

Discovering the Mathematics in Sound

Guide for Curriculum Unit 00.05.10
by Lewis L. Spence

Sound, which is an integral part of our environment affects the way we communicate and respond to our surrounding. This invisible form of energy creates an awareness that is almost as noticeable as the effect of light. Most middle school students are little aware of the nature of sound and how the principles of mathematics govern its behavior. This unit is developed to provide these students with a glance at the basic features of sound.

The topic of acoustics further demonstrates how sound can be manipulated to provide desired results for a good hearing environment for speech or music. The interdisciplinary approach to these ideas allows student the opportunity to use mathematics to interpret the science. The primary objective is to create more interest in mathematics as students have the experience of using mathematics as a tool and not in the usual isolation.

The approach should be geared to the performance level of the class - students should have the basic algebraic skill of substituting in a formula.

(Recommended for Algebra, grade 8.)

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