



## **Math and Science Objectives Taught Using Sound and Music Concepts**

Guide for Curriculum Unit 00.05.04  
by Mary Elizabeth Jones

This unit was designed to be taught by a middle school teacher of math and/or science. The unit explores sound from its origins to the present. Students will learn about the characteristics and types of waves. Wave frequency, pitch, amplitude and wave velocity are covered. Included in the unit are many classroom activities and research activities. The unit will be especially beneficial to students with a limited musical background.

The unit is divided into three sections. The first section covers wave characteristics, sound velocity, pitch and frequency and the Doppler effect. The second section explores amplitude, sound pressure level, noise and musical sounds. The last section focuses on persons involved in the origin of sound.

Students will learn to apply appropriate formulas in order to make mathematical calculations using data such as the speed and velocity of sound. Algebraic expressions will be constructed and solved using data collected in science class or supplied by the teacher.

Students will learn to collect and analyze scientific data. The data can be used to teach graphing skills.

There are several hands-on mini labs, which will allow students to make and test a hypothesis.

(Recommended for Math and Science, grades 5-7.)

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