



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

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## Introduction

The present volume presents 11 diverse subjects that share a common premise. Through an understanding of aspects of the acoustics, one can approach education and culture from a unique perspective.

Whether in using sound as a vehicle to motivate education in mathematics and science or to understand how diverse cultures have employed music in celebrations and every day life, we note that this subject has universal appeal.

Because each person is, in some respects, already an expert in acoustics (we hear and we speak in an advanced language system), several units begin with what we already know intuitively and then try to build on that knowledge. Important to the subject is an understanding of how we hear, not only for its academic interest but also for understanding how important it is to protect this unique path to human communication. Several units try to tune this unique perceptual instrument so that we are more attentive to our acoustical environment, whether it is in understanding music better or in understanding how environmental noise can impact our lives. Two units focus on the power of speech and its uses in story and drama.

A series of units coalesce around the cultures of Brazil and Kenya, integrating geography, social studies, and music to trace the traditions of these countries and how European and African influences were exported to the emerging culture of Brazil. Rosmarie Mongillo approaches the subject from the point of view of geography in her unit, "The Sounds of Samba" (in Brazil). Judith Dixon picks up this theme by examining "Brazilian Culture Through Music," whereas her colleagues from East Rock Global Magnet School, Jacqueline Porter and Doreen Canzanella, focus on the "The Sound of Music in Kenya," and "Exploring Folk Instruments and Sounds of Kenya and Brazil," respectively. Joe Lewis of the same school undergirds these efforts in his efforts with "The Science of Sound and Instruments."

Science, music, and reading come together in two complementary units from teachers of Roberto Clemente Middle School, in Mary Jones' unit on "Math and Science Objectives Taught Using Sound and Music Concepts" and Pamela Tonge's "Basic Reading of Sound Words-Onomatopoeia."

The use of speech in drama, with emphasis on the human voice and hearing, is the topic of Yel Hannon Brayton's "Tuning the (Human) Instrument for Actors and Writers." Her unit contrasts with that of Lewis Spence, also of the Betsy Ross Arts Magnet Middle School, who explores "Discovering The Mathematics of Sound." The mathematics theme is picked up by high school mathematics teacher, Andrea Sorrells, in her unit, "Sounding Off About Trig."

Finally, Eddie Rose of Riverside Education Academy tries to encourage hands-on problem solving and explore

the relationship of architectural sound to science and mathematics in his unit, "The Acoustic House."

The Fellows of this seminar brought a great wealth of information and enthusiasm to this subject, educating each other and this seminar leader, and stimulating many interesting sessions. Teachers perusing these units will find entire ones that can be imported into their classrooms as well as a variety of bits and pieces, in the forms of demonstrations and hands-on experiments, that will engage student curiosity and promote both confidence and competence in learning about the many aspects of acoustics in our world.

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