

# Discovering Sound and Noise

## ACTIVITY 2: *Measuring Sound and Noise in the Environment*



### **Description:**

Students will learn how to quantitatively measure sound and noise levels in the environment using sound level meters.

This activity addresses the following New York City Department of Education Performance Standards for Science:

Elementary: S2c, S4c, S5f, S6a

Middle School: S4c, S5f, S6a, S8b

High School: S4c, S5e, S5f, S6a, S8b

### **Objectives:**

- To help teachers and students understand the difference between sound and noise by quantitative measurements.
- To engage students in the use of a sound level meter during a hands-on activity.
- To explain in real numbers the definition of noise and related health effects.

### **Materials (for each group):**

Clipboards with pads attached

Pencils

Sound level meters

Blackboard and chalk

### **Background Information:**

- Sounds are caused by vibrations.
- Sound and noise are measured in units called decibels.
- Measurements of 85 decibels and higher are defined as noise.
- Extended exposure to levels over 85 decibels can cause health effects on the body.

### **Method:**

- Using the blackboard, generate two lists with the students. One side will include examples of sound; the other list will include examples of noise.

- Ask students what makes one list sound and the other list noise. Write down their responses.
- Demonstrate how to use the sound level meters before they go into the field.
- Explain to the students that they will be broken up into two or three groups (depending upon class size) and each group will do its own set of measurements in the neighborhood. Each group should have an adult leader to supervise and monitor this field activity.
- Students will be responsible for recording their meter readings. Agree upon and set a fixed time to return to the classroom.

### **Discussion:**

- When everyone has returned to the classroom, have a representative from each group begin writing their findings on the blackboard.
- Once all the results are written down, discuss them with the whole class.

Some thought questions:

- (1) Were you surprised by some of your readings? Give an example
- (2) What did you learn from this activity?

- Read a book about sound and noise. Use DEP's *Great Books and Websites for Children About Sound and Noise*.

### **For more information contact:**

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Also visit DEP's Web site at:

[www.nyc.gov/dep](http://www.nyc.gov/dep)