

# Sound and Vibration

Developed by: Jeffrey Sadow  
Artform(s): Music

## Learning Objectives

### **Students will:**

- Understanding sound as vibration through exploration of the triangle.
- Experiment with of the concept of duration, i.e., long vs. short.

## Students' Prior Knowledge Necessary For This Experience

- Shapes
- Counting

## Vocabulary

### **Arts Vocabulary:**

- Duration (long vs. short )
- Vibration (sound waves)

### **Curriculum Content Vocabulary:**

- Experiment: a scientific procedure undertaken to make a discovery.

## Materials Needed

- Triangle with handle and striker (preferably metallic)
- Listening ears

## Lesson Plan

### Warm Up

- Introduce the triangle as a shape. Suggested questions:
  - How many sides does a triangle have?
  - How many corners?
  - Let's count the corners and sides together.

### Main Experience

- Introduce concept of sound as vibration using triangle.
- Compare sound of triangle without handle (holding in hand), and then with handle.
- Explore the concept of duration (long or short).
  - How do you make a long sound shorter?
  - Make a long sound shorter by stopping the vibration (by holding the triangle in hand).

## Wrap Up

Finish lesson with song while playing triangle.

### **“Are You Sleeping?” (traditional)**

*Are you sleeping, are you sleeping,*

*Brother John, Brother John?*

*Morning bells are ringing, morning bells are ringing:*

*Ding, dong, ding, ding, dong, ding.*

## Intentional Questions

### **Open-Ended**

- What sounds can you hear around you when you are quiet, e.g., air conditioner, birds, sirens, etc.?
- What is an example of a long sound?
- What is an example of a short sound?

### **Problem Solving/Critical Thinking**

- How can you stop the vibration?
- How can you make a long sound shorter?
- What instruments can you think of where you can see the vibration, e.g., guitar, drum, violin, etc.?

### **Factual Questions**

- What is vibration?
- How many sides does a triangle have?
- What happens to the sound of the triangle when you stop the vibration?