

## ***SCHOOL PROGRAM OBJECTIVES, CURRICULUM CONNECTIONS, AND ACTIVITIES***

### **PROGRAM OBJECTIVES**

#### **Creating, Performing, and Participating in the Arts:**

This program promotes the idea that music making is fun, good for the brain, and stimulates a sense of discipline and community. If we are inspired to make music, life is full of opportunities to do so immediately using common materials all around us, exploring their musical and artistic value and how they work or *could* work, exercising our scientific curiosity.

#### **Knowing and Using Arts Materials and Resources:**

Students are encouraged to experiment with everyday objects to see how they can be musical, and shown specific examples.

#### **Responding to and Analyzing Works of Art:**

Students, through experimenting with everyday things to see how they could be musical, see how doing so provides a springboard for studying life around them. Perceiving spatial and temporal patterns going from one art form to another also involves kinds of scientific thinking (e.g. brush strokes □ dance moves □ rhythm □ vibration □ frequency), and this performance is presented with these connections in mind.

#### **Understanding the Cultural Contributions of the Arts:**

Music making reminds us of what inspired it; birdsong for example, or the cycles of nature, but especially human feelings. Also: Fine glass making leads to glass *music* making, then an eclectic inventor and scientist (Ben Franklin) exposed to the musical glasses invents an advanced instrument that Mozart, Beethoven, and other composers will use in their work.

## **ACTIVITIES AND CURRICULUM CORRELATIONS**

### ***SCIENCE***

Using captivating object lessons, Brien guides a tour of sound science and elementary physics related to sound and musical instruments. Students are exposed to demonstrations of how sound is generated, what 'waves' of sound are, what 'frequency' of sound waves means, the relationship between vibration and sound, and various ways sound frequency can be manipulated, especially in the example of water-tunes instruments. The concept of friction is explored to demonstrate how water glasses can be played.

Water tuning is demonstrated with water and rice bowls. Vibration is demonstrated using a goblet and a Ping-Pong ball. A string and serrated stick are used in an 'explorer-cam' recreation of violin bow friction.

### ***HISTORY AND CULTURAL STUDIES***

Students are shown how commerce and expansion of civilization enables new musical art forms, beginning with ancient Asian water-tuned instruments. A set of water bowls are played along with commentary on how they were developed in various cultures, what materials were used to create them, and in what context they were played.

Students will also learn the history of early water *glass* instruments played in Europe; the culture and social world surrounding these instruments, materials, different methods of playing them, and practitioners.

A third historical/cultural segment woven into the program involves specifically Dr. Benjamin Franklin's invention of the Armonica, an advanced glass instrument that achieved great notoriety in the late 1700's. Brien assembles and plays a small Armonica.

### ***MUSIC***

In exploring the various ways a musical instrument can be assembled, students are exposed to the musical science of intervals and harmony. Classical music is played in the assembly, including pieces composed for the glass armonica by W. A. Mozart, Beethoven, and others. In order to demonstrate the melodic value of the glass harp, other selections are included drawing from Jazz, movie themes, Appalachian folk music, Celtic music, and popular songs.

## **STUDENT PARTICIPATION**

- A student or teacher will play a glass for the audience, and play a duet with Brien.
- A student will assist Brien in demonstrating violin bow friction.
- Students will describe what they see in scientific object lessons.
- Students will have a chance to ask questions and make musical requests.