

## *Tuning Fork Vibrations*

- (1.) Using the heel of your shoe, strike the tuning fork so it vibrates. Observe the vibrations.
- (2.) Strike the tuning fork again and then place the end small end of the tuning fork onto the table top. Observe.
- (3.) Strike the tuning fork again and place prongs of the tuning fork into the water. Describe and draw a sketch of what you observe in your journals.
- (4.) Find a second tuning fork that is either longer or shorter and predict what you think will be different about the sound. Strike the tuning fork and listen closely. As a group, discuss why you think the tuning fork sounded differently.
- (5.) Clean-up the station so that it looks like it did at the start.

### Guiding Questions:

1. Explain how you think the tuning fork caused the water to splash.
2. Why does one tuning fork sound differently than another?

## *Rubber Band Guitars*

- (1.) Observe each of the rubber bands and predict how each of them will sound when plucked.
- (2.) Pluck each of the strings with your fingers and listen carefully.
- (3.) As a group, explain why you think each of the rubber bands sounded differently.
- (4.) Try to pluck your favorite song for your lab partners.

### Guiding Questions:

1. Explain how the rubber band produced sound when you plucked it.
2. Why do you think the rubber band vibrates louder on the guitar than it does all by itself?

## *Drum It Up*

- (1.) Tap on the drum or tambourine and observe what happens to the rice.
- (2.) Watch and listen very carefully.
- (3.) Draw a picture of what you see and explain why the rice is moving in your journal.

### Guiding Questions:

1. What do you think is happening to the rice grains? Draw a picture to explain what you observe.
2. Would an object larger than a grain of rice, such as a potato, vibrate the same as the rice grain?
3. How could we tell that the drum is vibrating even if we didn't have any rice?

## *The First Phones*

- (1.) Using the piece of string provided, tie a paperclip onto each end of the string.
- (2.) Thread one of the paperclips through the slit on the bottom of the plastic cup. Tape the paper clip snugly to the bottom of the cup. Repeat this process with the other cup and paper clip.
- (3.) Working in pairs side-by-side, hold the cups up to you and your partners inside ear. Gently pull the string tight and then take turns plucking the string. Describe what you observe.
- (4.) Taking turns, have one student talk gently into the cup while the other partner listens. What do you observe? Switch places and repeat this step.

### Guiding Questions:

1. Explain how do you think the sound is getting from one cup to the other?
2. Do you think that real phones work in the same way? Explain.

## *Too Loud?*

- (1.) We listen to thousands of sounds everyday and some of them are so loud that they can cause harm to our hearing. Sound is measured in a unit called the decibel (db).
- (2.) Try to guess the loudness of the sound (in number of decibels) that would be needed to damage your hearing if you listened to that sound for a long time.
- (3.) Click on the sounds, starting with the softest and then move your way to the loudest.
- (4.) What loudness of sound does this website say is needed in order to damage your hearing?
- (5.) Make a list of the sounds that your group has heard today that are higher than the number needed to cause damage to your hearing.

### Guiding Questions:

1. Do you think that the communities where we live are getting quieter or louder overall? Explain why you think this.
2. What are some things that you can do to prevent your hearing from being damaged?