**Seeing Sound Worksheet**

*Instructions:*At each activity station, complete the questions below.

**Station 1: Oobleck Dance**

1. Observe how oobleck responds to a range of low-frequency sounds. At which frequency does oobleck dance most wildly?

1. Do sound waves need high or low amplitude in order for oobleck to dance? How can you tell?

**Station 2: Sound Visualization**

1. Can you see that sound is a wave? How can you tell?

1. Can you feel that sound is a wave? How can you tell?

1. How do high- and low-frequency sounds change what the water (or grain) looks like?

1. Do high-frequency sounds have long or short wavelengths?

**Station 3: Testing homemade Speakers**

1. How does the yogurt cup speaker make sound? How do you hear this sound?

1. Using the materials in the box, how were you able to amplify the sound from the yogurt cup speaker as much as possible? What did you discover?

**Station 4: Practice Problems**

1. Label amplitude and wavelength on the drawing of Wave 1.



1. In the box below, draw a wave with the same wavelength as Wave 1, but lower amplitude.
2. In the box below, draw a wave with higher frequency than Wave 1, but the same amplitude.
3. In the box below, draw a wave with lower frequency and amplitude than Wave 1.

**Station 5: How Do Stringed Instruments Make Sound?**

1. Take a length of string and pull it just tight enough to hear a sound when the string is plucked by a teammate. Is this a high- or low-frequency sound? Does this sound have high or low pitch?

1. Pull the string tighter. Does this sound wave have higher or lower frequency than before?
Is the pitch higher or lower than before?

1. If you pluck the string more strongly so that the sound is louder, what happens to the sound wave?

1. Pluck the string on top of a petri dish with water. Do you see evidence that the sound made by the string is a wave?

1. Why do you think stringed instruments have many strings, some tighter and looser?