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?

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

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Station 2: Sound Visualization
1. Can you see that sound is a wave? How can you tell?

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

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

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

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Station 3: Testing homemade Speakers
1. How does the yogurt cup speaker make sound? How do you hear this sound?

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2. 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?

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Station 4: Practice Problems
1. Label amplitude and wavelength on the drawing of Wave 1.

![Wave Drawing]

2. In the box below, draw a wave with the same wavelength as Wave 1, but lower amplitude.

![Blank Wave Drawing]
3. In the box below, draw a wave with higher frequency than Wave 1, but the same amplitude.

4. 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?

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

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

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4. 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?

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

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