



## Sound Lab

Name \_\_\_\_\_

1. Go to <https://academo.org/demos/virtual-oscilloscope/>
  - A. Under **Input** select “Live Input (5 V peak amplitude)” and say “AAAAAAA” smoothly into the microphone.
  - B. Check the **Freeze Live Input** box to stop recording.
  - C. Print the wave form.
- 1a. Would you say this is a periodic wave? Support your answer with characteristics.
- 1b. How many waves are show in this sample? Explain how you determined this number.
- 1c. What is the period of this wave? Explain how you determined the period.
- 1d. What is the frequency of this wave? Explain how you determined the frequency.
- 1e. Calculated the wavelength assuming the speed of sound is 340 m/s. Relate the length of the sound wave to something in the classroom.
- 1f. What is the amplitude of this wave? Explain how you determined amplitude.
- 1g. What would be different about the graph if the sample were 10 times as long? How would your answers for questions a-f change? Explain your thinking.

1h. What would be different about the graph if you changed the sample rate? Test your ideas. Print and attach the graph and label it with your name and #1h. For example: Linda #1h

2. Now have someone else in your group record “AAAAA.” Print the graph and label it with their name and #2 (Sam #2). Compare and contrast the two wave patterns. Be specific in your answer. For example: determine the characteristic that you did for the first person (number of waves, frequency, period, amplitude, and wavelength) and include any qualitative observations.

3. Record your straw instrument (or tuning fork). Print the graph and label it #3. Compare and contrast the waves made by the human voices and the instrument.

4. If you used the same instrument to collect data for a louder sound. What changes do you expect?

- a. Test your ideas and attach a new graph and label it #4.
- b. What did you do to make the sound louder? Compare and contrast the waves collected for the softer sound to those collected for the louder sound.