What's that Noise?

Estimated Time: 30 minutes each day throughout the week.

SUMMARY
Environmental pollutants are all around us. Pollutants are substances and/or energy that humans intentionally or unintentionally introduce into the environment that cause adverse effects on the environment. You are probably familiar with some pollutants like trash. One form of pollution that many of us are exposed to daily, but cannot see, is noise pollution. In this activity, students will examine noise pollution data by collecting data in their environment.

WHAT YOU'LL LEARN

1. Students will learn how to measure noise using a smartphone.
2. Students will examine variability in noise pollution they experience throughout the day.

Materials Used	**Resources Used**
● Smart phone ● Pencil and paper ● Notebook for journaling	● https://www.youtube.com/watch?v=5jfmzufa8qo

WHAT TO DO

1. We are going to work with the DecibelX app. On iPhones, download this app in the app store and for Androids, in your google play store.
2. Once you have the app downloaded, you will see the main screen. The app immediately begins collecting noise level in decibels [dB(A)]. This is the main value displayed as the orangish-red number in the lower center of the screen.
3. To start recording, touch the play button. Be very quiet and look at the reading. What do you notice about the noise level? Record those values. Did anything happen in your environment to increase the decibels reading?
4. Now make a loud noise like speaking loudly or clapping your heads. What did you notice about the value?
5. The DecibelX app also gives you the average decibel reading in the lower right (blue number on the left) and the maximum decibel you have experienced on the lower right (blue number on right).
6. If you tap the play button, pause your recording and hit the reset button (circular button to the left of the play button). Now, make a recording and download our data. On the main screen, tap the play button. Record for about 30 seconds. You can save your recording and send it to yourself via email or text.
7. Use the DecibelX app to make a 30-seconds recording of the noise levels around you three times a day over the next week. Keep a journal of your recording, make the following observations whenever you do decide to record: 1) Day; 2) Time; 3) Location; 4) What are you doing; and 5) What are you feeling during the recording (feelings can include physical feelings like headache, hungry, stomach hurts, etc., or emotional feelings like excited, curious, anxious, etc.). If there is anything unusual happening in your environment, you might also want to record those events happening. If you are watching television, what are you watching? Is it an event that might make you react with

your voice or clapping like a football game, or are you watching your favorite cartoon? Are things happening around your house that relate to noise, like cooking, cleaning, or is someone in your home using louder appliances? All these things will affect noise levels, so writing down that information may help you understand noise levels better.

8. After recording noise levels and making observations throughout the week, interpret your data. What is the average noise level you experienced throughout the week? What were the maximum and minimum values for each day? What was happening when you experienced the maximum and minimum values? Did you notice your feelings change as values increased and decreased?

TIPS

- Try recording at the same time each day. This might help you understand and control for some of the variables in noise exposure you hear each day.
- See what decibels you experience when you listen to your music or TV. Are you listening to the music or the television too loudly?