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| **“Measuring Sound Waves”** | |
| **MUSICAL GRAPHIC INTRO**  Globisens [www.globisens.com](http://www.globisens.com) | |
| One of the most important benefits of educational technology is to show abstract concepts… a simple example being this simple sound wave experiment.  Now let’s make some noise…  You saw a sound wave right?  No! of course not  And your students certainly won’t – so how can you explain it to them?  All you need is any tuning fork and we’re going to take the Labdisc microphone sensor – located right here under the microphone key.  The Labdisc is connected wirelessly to the computer. | TO CAMERA  EQUATION: |
| The Bluetooth icon here shows that we are wirelessly connected to the Labdisc.  We will open the setup screen – here we can see all our sensors.  Look how many we have in a single labdisc. We will select the Microphone.  A sound wave is really fast and luckily for us we can take very fast measurements of up to 25,000 samples per second. In this experiment we will choose 1,000 samples.  Since we take 25,000 samples per second and only 1,000 samples. This whole experiment will take less than a second. | CLOSE-UP ON SOFTWARE  PULL OUT |
| Now we’re ready to record  We will place the Labdisc 10cm away from the tuning fork. We will hit the tuning fork, wait a few seconds for the sound to stabilize and record the sound. | HITTNG THE TUNING FORK |
| Voila!  We visualize a sound wave.  As you can see in less than a second we have collected 1000 data points, sent them wirelessly to a computer and show our students how a sound wave look. | CLOSE-UP OF SCREEN |
| Now let’s analyze the data we have collected.  We can first see the samples.  We can place two markers on the graph at the beginning and end point of an oscillation cycle.  Using these two markers we can calculate the frequency of the wave. | NEW SHOT CLOSE UP OF SCREEN |
| And look how beautiful it looks when we use two tuning forks at different frequencies. | SCREEN OF TWO SOUND WAVES |
| So now we know what a sound wave looks like, we can even describe it’s frequency and speed! | WIDE TO CAMERA, HITTING TUNING FORK AGAIN |
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