

### **Tuning Fork Frequency by Oscilloscope**

One way to find the frequency of a tuning fork might be to record the sound on “sound recorder”, which can be found on a computer using the following path: “all programs”, “accessories”, “entertainment”. Your team will need a computer that has a microphone port.

The team could then play that sound, and connect a cord to the earphone or speaker port, and observe the voltage signal on an oscilloscope. The wave should look something like a sine wave. Measure the time from peak amplitude to peak amplitude, and this will give us the period of the sound wave. Knowing the period, we can calculate the frequency. (frequency =  $1/T$ )

I will give you a known frequency fork so that you can make sure the calibration of the time period is on. (Tap the fork on something with a little give, like a book.) Then I will give you a fork with the frequency covered with duct tape. Get your measurements, then uncover the printed frequency.

Write this up as individuals in word, and e-mail as an attachment to Mr. Shumway

#### **Write up components:**

1. **Conclusion:** - Is this an effective way to measure the frequency of an unknown pitch?
2. **Comparison of measurement to printed frequency.** –(Do you have any suggestions for improvements on the lab for next year’s students?)
3. **Procedures** – Explain the steps well enough that an absent student could repeat the lab.
4. **Measurements.**