**Lab - Resonance In a Closed Tube**

**Name:**

**Group Members:**

**Date:**

**Objective** : Determine the speed of sound using a closed tube apparatus and tuning forks

**Materials:** tuning forks, GLX Xplorer (optional), closed tube apparatus

**Procedure:**

1. Tap a tuning fork and hold it over the open end of the adjustable tube
2. Move the tube up or down until you hear resonance
3. Measure the length of the tube. Remember to measure correctly.
4. Repeat 1-3 for 5 more tuning forks
5. Determine the speed of sound in each case and find an average speed of sound

**Results:**

Record your results in the table below.

|  |  |  |  |
| --- | --- | --- | --- |
| Frequency (Hz) | Resonance Length (m) | Wavelength (m) | Speed of Sound (m/s) |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |

Average Speed of sound:

Speed of Sound based on Temperature:

S**ample Calculations**

**Discussion:**

1. What do you feel is an acceptable error? Explain your reasoning.
2. What are some possible sources of error?

**Conclusion :**