

PhET Tips for Teachers Sound

Written by Trish Loeblein, last updated June 5, 2010

Non-obvious controls:

- Try all the different tabs at the top of the simulation. The tabs are designed to help teachers scaffold lessons or make lessons age appropriate by using only some tabs.
- You can **Pause** the sim and then use **Step** to incrementally analyze.
- The window size is not variable for this sim.
- There is a bug that we have not solved with selecting **Audio** on one tab and then trying to use the **Audio** on a different tab. When you change tabs, you may have to check, uncheck, and then check again.
- If you are doing a lecture demonstration, set your screen resolution to 1024x768 so the simulation will fill the screen and be seen easily.

Important modeling notes / simplifications:

- The volume observed by the **Listener** varies with distance except on the **2 Source** Tab
- On the **2 Source** tab:
 - The **Audio** gives the sound that the listener would hear. To see how the speakers would sound, use the simulation [Wave Interference](#), **Sound** tab.
 - The nodal lines are easier to observe at high frequency
 - The sound volume is not dependant on distance on this tab
- On the **Listening with Varying Air Pressure** tab, the color of the air gets more dark as the pressure decreases. So black represents a vacuum.

Insights into student use / thinking:

- The **Help!** button on each tab will enable students to explore features that they might not discover on their own. For example, on the **Measure** tab, the blue lines and ruler are movable and can be used to help identify waves.

Suggestions for sim use:

- For tips on using PhET sims with your students see: [Guidelines for Inquiry Contributions](#) and [Using PhET Sims](#)
- The simulations have been used successfully with homework, lectures, in-class activities, or lab activities. Use them for introduction to concepts, learning new concepts, reinforcement of concepts, as visual aids for interactive demonstrations, or with in-class clicker questions. To read more, see [Teaching Physics using PhET Simulations](#)
- For activities and lesson plans written by the PhET team and other teachers, see: [Teacher Ideas & Activities](#)