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Wind Chime Physics PETE LOHSTRETER, AAPT, RICHARD TAYLOR, AAPT, TSAAPT, RICHARD ABBONDANZIO, NSTA, RACHEL WYATT — The Hockaday School is a private all girls school in North Dallas. We are in our fifth year of teaching Physics to all ninth grade students. This activity was designed to get the students out of their seats and into the lab doing physics. Investigating the physics of wind chimes is an easy way to involve the students by designing an experiment, collecting data, analyzing data, finding relationships and making and testing predictions using the new equation. Two questions were posed. 1- To determine the best place to hold a steel pipe so that when it was hit with a mallet it would ring for the longest time. We were excited to see that the class results agreed extremely well with the textbook value of .22 times the pipe length. 2- To determine the relationship between period and length. This involved measuring a sound wave graph recorded with a microphone connected to their laptop computer. It is interesting to see that the frequency is not a linear function of length as we expect with strings and organ pipes. Skills used and developed include data collection, uncertainty in measurement, graphic analysis and equation manipulation. This activity is used to introduce the basic nature of vibrations and lead-in to the study of the wave nature of sound and light. From student interviews we are convinced that we have met our goals, and that we have laid a firm foundation for our students' further studies in physics.

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