Name(s)

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Project Number

J1710

Project Title

Waves

Abstract

Objectives/Goals
To investigate the behavior of transverse waves.

Methods/Materials
An oscillator is connected to a wave function generator on one end. A weight is attached to the string on the other end. The function generator registers the frequency. Using a ruler, I measured the wavelength and the amplitude. I calculated the speed, period, and equation of the wave. I also set different frequencies to get different number of the nodes of on the string.

Results
After I tested several groups in different situations in my experiment, I calculated the velocity of the wave using two different equations and comparing them. Then, I compared the placement of the y value of the wave I calculated using the equation and the one I measured with the ruler. Also, I graphed several standing waves.

Conclusions/Discussion
I listed several reasons that might have caused the error and I also calculated the error percentage. Then, I figured out the relation between the frequency and some factors. For example, as the number of nodes grows, the frequency grows as well. I also found the trend of how the frequency of a string increases as the number of nodes on the string grows.

Summary Statement

Speed and equations of transverse waves.

Help Received

Work at Seebach Family Physics & Chemistry Lab at Ribet Academy.