FROM TEACHERS FOR TEACHERS

TECHNOLOGIES IN STEM EDUCATION

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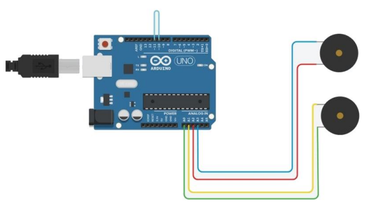
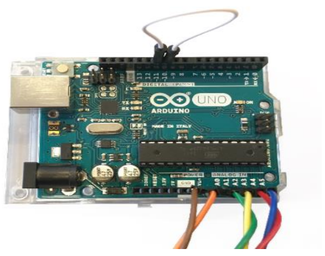
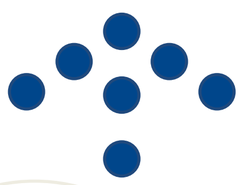
Acoustic Levitation

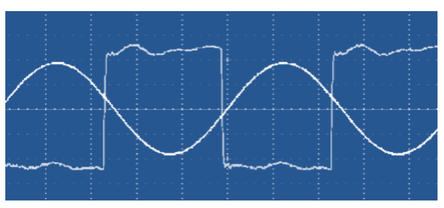
Let's make visible what is not visible

The project deals with levitation of low-density objects using an ultrasonic sensor. Levitation is performed by using acoustic waves (sound) which are produced by ultrasonic sensors with a certain frequency. The goal is producing standing waves, which will act against the gravitational force of the Earth acting downwards, that allows the object to levitate in the air.









Connection of physics with 3D printing, programming with Arduino, soldering and working with an oscilloscope. Science as from sci-fi films will **impress** every student.

Impress

We can **measure** the wavelength of a sound wave and then calculate the speed of sound.

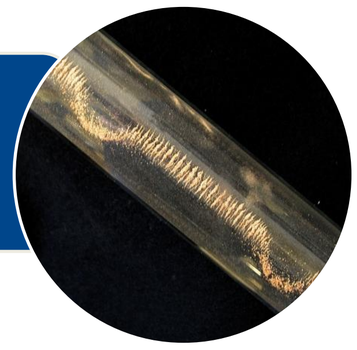
$$\lambda = \frac{v}{f} \longrightarrow v = \lambda \cdot f$$

$$v = 8{,}3 \cdot 10^{-3} \cdot 4{,}1 \cdot 10^{4} = 340\ \mathrm{m} \cdot \mathrm{s}^{-1}$$

Measurement

A new way to make the sound more **visible**. Modern Kundt's tube.

Visualization



Science, technology, engineering and mathematics. All in one.
Let's use modern technologies to bring physics closer to people

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