

Dear SOCK Recipient,

Welcome to the 2021-2022 SOCK! This year's SOCK focuses on acoustics and was made in partnership with the Acoustical Society of America (ASA) for the International Year of Sound. This set of materials is designed to create an outreach table for the general public and children. It is our hope that this helps them to explore the world of sound around them. The goal of the SOCK program is to provide a comprehensive and complete set of demonstrations to be used in an outreach event. We hope you enjoy it!

Parts list:

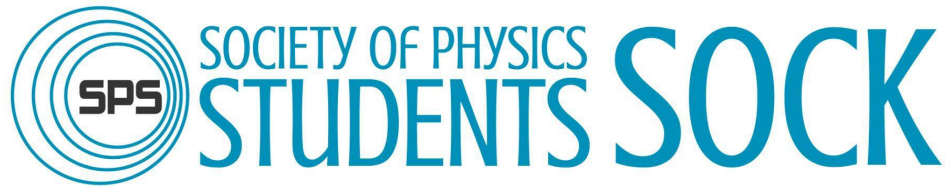
- Oscilloscope
- Microphone
- Foam Ball
- Buzzer
- 9v battery holder
- Slinky
- Tuning fork
- Latex tubing
- Stickers
- Pens
- Water cup
- 3 laminated handouts
- USB drive with a copy of all videos, write ups, and instructions



Portable Oscilloscope and Microphone: Sound is not visible to the human eye, but have you ever wondered what sound looks like? This demonstration utilizes a portable oscilloscope to visualize sound signals!

www.spsnational.org/programs/outreach/portable-oscilloscope-and-microphone

Longitudinal and Transverse Waves: What are waves? And, more specifically, what are sound waves? A slinky is used to explain two types of waveforms - longitudinal and



transverse - while a tuning fork exhibits sound waves as longitudinal waves.

www.spsnational.org/programs/outreach/longitudinal-and-transverse-waves

Interactive Soundscapes: We can see many features of a place, but what we hear in a place tells us a lot more than what we see. Here we will listen to soundscapes and travel to different places via sound.

<https://www.spsnational.org/programs/outreach/interactive-soundscapes>

Doppler Ball: What exactly is the doppler effect? To find out, use a foam ball with a buzzer to throw around and experience the doppler effect!

www.spsnational.org/programs/outreach/doppler-ball

Elastic Cord: What are standing waves? What is a fourier transform? Use a latex rope to demonstrate different modes of standing waves and to construct waves!

www.spsnational.org/programs/outreach/elastic-wave

Vocal Fold Straws: Where does our voice come from? Learn about how our vocal folds work by using straws to create vibrations!

www.spsnational.org/programs/outreach/vocal-fold-straws

Printouts for your table display:

- Introduction to sound: [K-7 grades](#)
- Introduction to sound: [8-12 grades](#)
- [Diagram](#) of the human ear

Sincerely,

Noah Johnson, *2021 SPS SOCK Intern*

Brad Conrad, *SPS Director*

Email any questions or feedback to sps@aip.org or call 301-209-3007.