Exploring the use of Open Educational Resources in Physics

Nancy O'Neill, Ed.D.

Acting Director, Kirwan Center for Academic Innovation, University System of Maryland

Chesapeake Section of the American Association of Physics Teachers Fall 2023 Semi-Virtual Meeting
October 21, 2023 @
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OER = Free + Open

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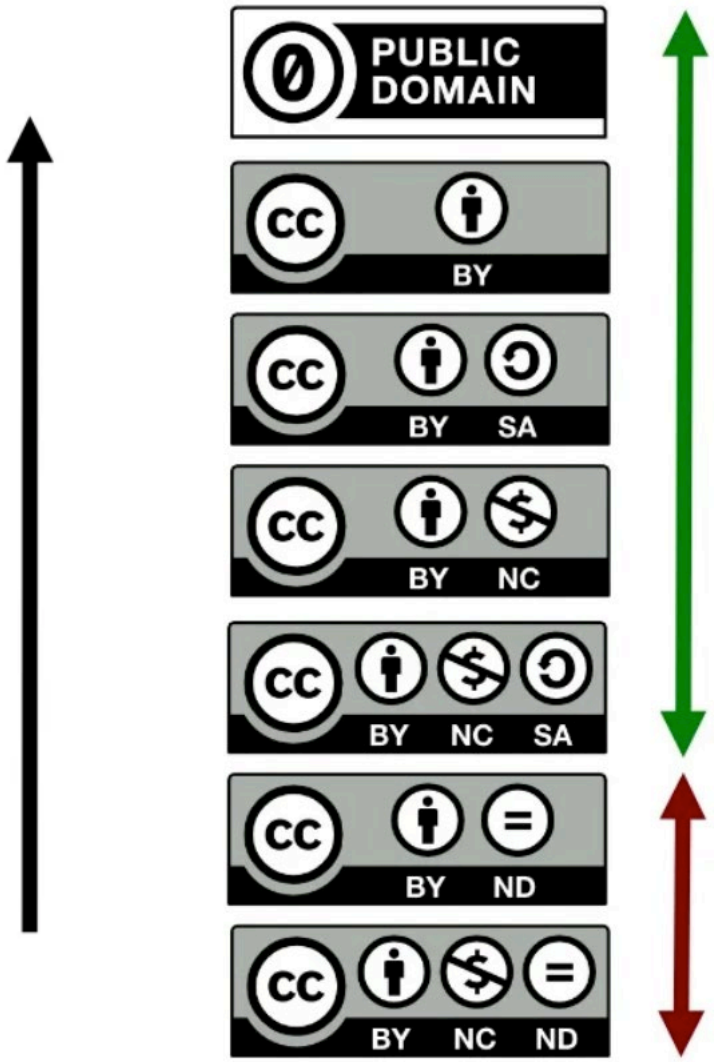

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Adapted from Cable Green, 2015
https://www.slideshare.net/cgreen/going-open

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David Wiley, n.d.
http://opencontent.org/definition/

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Mini-Lab: Investigating Gas Laws

☆ ☆ ☆ ☆ ☆

View Resource

Description

Overview: This activity is a mini-lab where students determine relationships between gas laws and temperature, pressure, and volume; particularly Charles and Boyle's Law. The concept of mini-labs originated from Dr. Dan Branan and Dr. Matt Morgan. See mini-labs.org for more details.

Subject: Physics

Level: High School

Material Type: Activity/Lab, Assessment, Lesson Plan

Author: Tania Lauby

Provider: Science Education Resource Center (SERC) at Carleton College

Provider Set: Pedagogy in Action

Date Added: 12/13/2011

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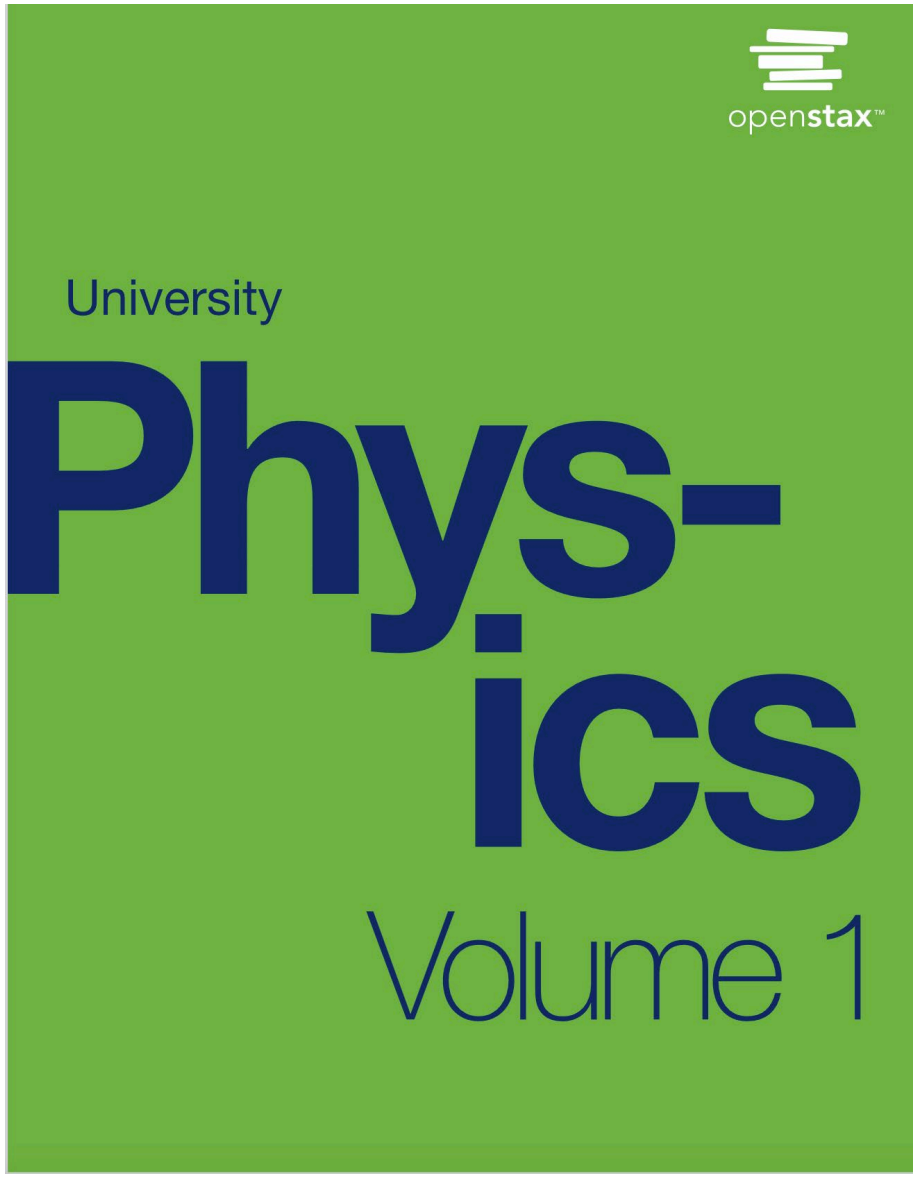
Language: English

Media Format: Text/HTML

The Role of OER in Increasing Equity

- Equity of access
- Equity of participation
- Equity of representation
- Equity of outcomes

OER in Physics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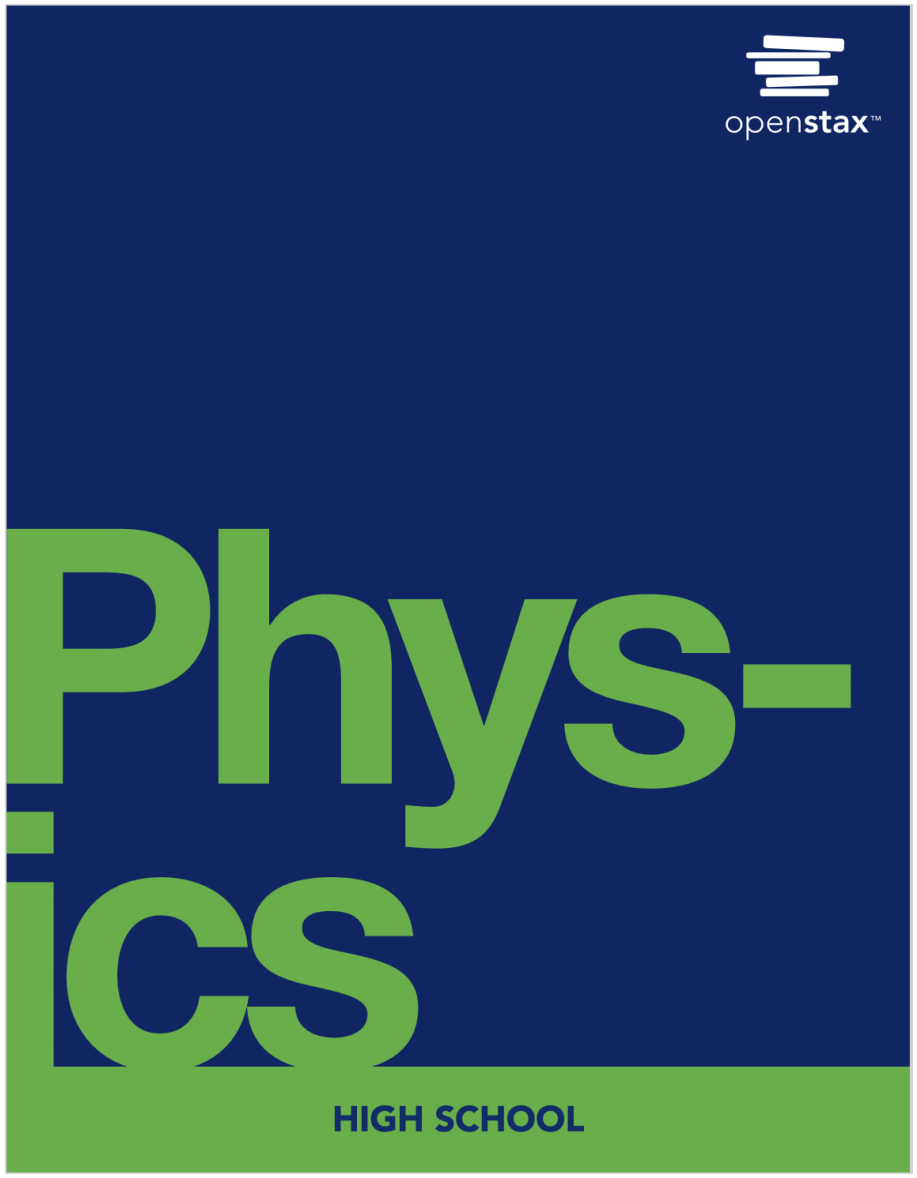
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SENIOR CONTRIBUTING AUTHORS
Andrew Fraknoi, Foothill College
David Morrison, National Aeronautics and Space Administration
Sidney C. Wolff, National Optical Astronomy Observatory (Emeritus)

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PhET
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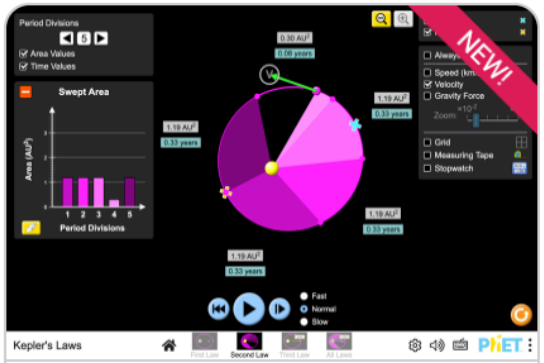
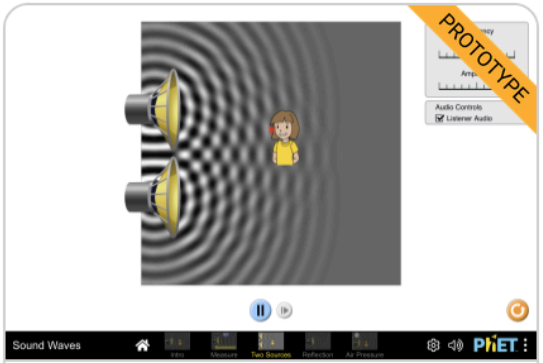


Kepler's Laws



Sound Waves

Using PhET Simulations in Teaching

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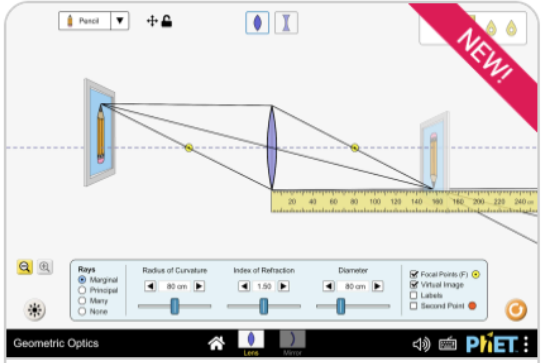

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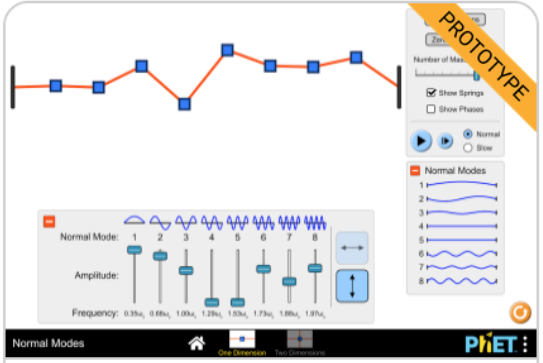

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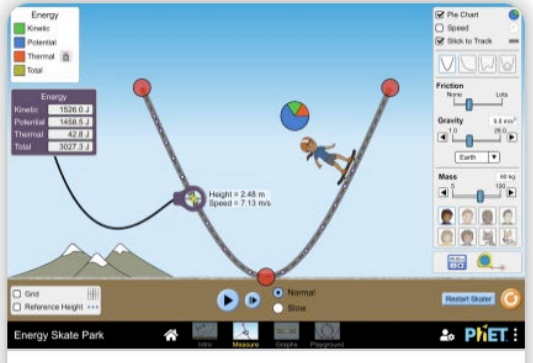
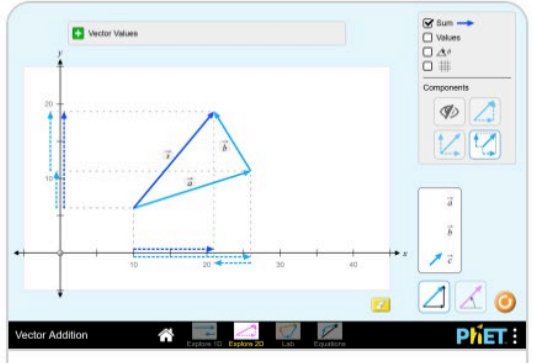


Energy Skate Park



Vector Addition

Teacher-Submitted Activities

✔ Indicates that an activity is aligned to our inquiry-based guidelines.

Filters Level: All | Type: All | Subject: All | Language: All

TITLE	INQUIRY	AUTHOR	LEVEL	TYPE	SUBJECT	LANGUAGE
Algebra-based Physics Semester one lessons, clicker questions, and schedule in pdf (Inquiry Based)	✔	PhET Trish Loeblein	High School Undergrad - Intro	Lab Homework Demonstration	Physics	English
Wave Modeling and Wave addition (Inquiry Based)	✔	PhET Trish Loeblein	High School Undergrad - Intro	Lab	Physics	English
Wave Representations (Inquiry Based)	✔	PhET Trish Loeblein	High School Undergrad - Intro	Lab	Physics	English
Wave unit (Inquiry Based)	✔	PhET Trish Loeblein	High School Undergrad - Intro	Lab Demonstration	Physics	English
Waves: Superposition (Inquiry Based)	✔	PhET Trish Loeblein	High School Undergrad - Intro	Lab	Physics Mathematics	English
Introduction to Fourier Analysis		PhET Sam McKagan, Kathy Perkins and Carl Wieman	Undergrad - Intro Undergrad - Advanced	Homework	Physics Mathematics	English

PhET™ INTERACTIVE SIMULATIONS

Teacher-Submitted Activities

A wide variety of teaching activities have been contributed by the PhET team and its user community, and are available for you to adapt and use in your classroom. If an activity is marked as a contribution from the PhET team (as indicated by the presence of a PhET logo in the author field), it has been posted as a CC-BY resource. For other activities, please contact the submitting author to affirm your use under a CC-BY license. The following attribution is required to share or redistribute CC-BY activities or adapted activities:

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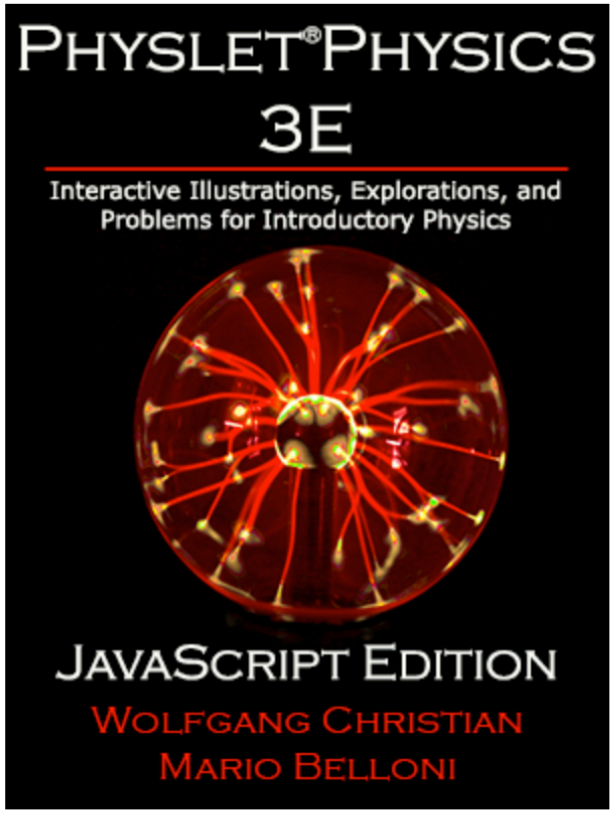

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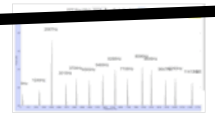
Computer Program Detail Page

Sound Analyzer JS Model

written by Félix J. García Clemente, Tze Kwang Leong, and Loo Kang Wee



The Sound Analyzer JavaScript model records the sound from the computer's microphone and displays its frequency spectrum. It is designed for classroom demonstration and student experimentation. For example, measure sound from pipes with different boundary conditions and estimated the length of the pipe.

The Sound Analyzer JS Model was developed using the Easy JavaScript Simulations (EjS) version 6. It is distributed as a ready-to-run html page and requires only a browser with JavaScript support. This model runs on all platforms, including mobile devices.

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Published: September 2, 2019
previous versions

2 ready-to-run examples are available

- Sound Spectrum Analyzer
- Open **Sound Analyzer Source Code** in Web EJS

1 source code document is available

Subjects	Levels	Resource Types
Oscillations & Waves - Acoustics = Wave Analysis and Synthesis - Instruments = Air Column Instruments = Tuning Forks	- Lower Undergraduate - Middle School - High School - Upper Undergraduate	- Tool = Software

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Computer Program Detail Page

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The Astronomy of Many Cultures

*Created **June 20, 2020** by **Andrew Fraknoi***

This resource guide, for instructors and students in introductory astronomy courses, focuses on the contributions to astronomy of African, Asian, Hispanic, South Pacific, Islamic, and Native American cultures. It also contains a section on reports and articles for achieving greater diversity in science. Written by Andrew Fraknoi, the guide includes written, on-line, and audio-visual materials, which can be used directly in the classroom, for student papers, or for personal enrichment.

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