



# PER User's Guide

Physics Education Research

Evidence-based resources for teaching physics



## PRISMS PLUS

Indicates a research-demonstrated benefit

### Overview

A high school physics curriculum and professional development program that uses a learning cycle pedagogy, inexpensive materials, and technology.



#### Type of Method

Instructional strategy, Full curriculum



#### Level

**Designed for:** High School , Teacher Professional Development

**Can be adapted for:** Teacher Prep Course, Middle School, Intro College Algebra-based, Intro College Conceptual



#### Setting

**Designed for:** Lecture - Small (<30 students) , Studio

**Can be adapted for:** Lecture - Large (30+ students), Recitation/Discussion Session, Lab



#### Coverage

Few topics with great depth, Teachers can select from many topics, but only cover a few in depth.



#### Topics

Mechanics, Electricity / Magnetism, Waves / Optics, Thermal / Statistical, Modern / Quantum



#### Instructor Effort

Medium



#### Resource Needs

Computers for students, Simple lab equipment, Advanced lab equipment



#### Skills

**Designed for:** Conceptual understanding , Problem-solving skills , Making real-world connections , Using multiple representations, Designing experiments

**Can be adapted for:** Lab skills, Metacognition



#### Research Validation

**Based on research into:** theories of how students learn , student ideas about specific topics , research into instructional practice

**Demonstrated to improve:** conceptual understanding , problem-solving skills , beliefs and attitudes

**Studied using:** classroom observations , analysis of written work



**Compatible  
Methods**

[Modeling](#), [CPU](#)



**Similar Method**

None



**Developer(s)**

Lawrence Escalada, Roy Unruh, Timothy Cooney, and master high school physics teachers



**Website**

<http://www.physics.uni.edu/prisms/prisms-plus>