



## Physics by Inquiry

Indicates a research-demonstrated benefit

### Overview

Lab-based guided-inquiry curriculum for future and current teachers to develop deep understanding of physics content and scientific reasoning skills.



Type of Method

Full curriculum



Level

**Designed for:** Teacher Prep Course , Teacher Professional Development , Intro College Conceptual

**Can be adapted for:** Pre-intro course for underprepared students



Setting

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

**Can be adapted for:** Recitation/Discussion Session, Lab



Coverage

Few topics with great depth



Topics

Mechanics, Electricity / Magnetism, Waves / Optics, Thermal / Statistical, Astronomy



Instructor Effort

High



Resource Needs

Simple lab equipment, Cost for students, Tables for group work, Very well-trained instructors, minimal equipment for experiments



Skills

**Designed for:** Conceptual understanding , Making real-world connections,

Using multiple representations, Designing experiments, Metacognition, Ability to teach by inquiry



Research Validation

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

**Demonstrated to improve:** conceptual understanding , teacher RTOP scores

**Studied using:** student interviews , research at multiple institutions , research by multiple groups



Compatible Methods

[JiTT](#), [SCALE-UP](#), [LA Program](#), [Diagnoser](#)



Similar Methods

[UW Tutorials](#), [PET](#), [PSET](#)



**Developer(s)**

Lillian C. McDermott, Peter S. Shaffer and the Physics Education Group at UW



**Website**

<http://www.phys.washington.edu/groups/peg/pbi.html>

