



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



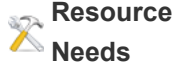
Topics

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>

