



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>

